



Discharge Report

Workspace: 72438-4FSRUInvioGNL-12R

Study: Invio GNL Water

Equipment Item: 12R Manichette GNL riempimento FSRU

72438-4FSRUInvioGNL-12R\Invio GNL Water\12R Manichette GNL riempimento FSRU

Material	GAS NATURALE	
East	0	m
North	0	m

Scenario (Leak) : 60mm

72438-4FSRUInvioGNL-12R\Invio GNL Water\12R Manichette GNL riempimento FSRU\60mm

Weather: Category 2/F

INPUT DATA

Inventory data

Mass in vessel	77130	kg
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Stagnation Data (upstream end for long pipe)

Initial pressure (gauge)	5	bar
Initial temperature	-160	degC
Fluid state	Non-saturated liquid	

Scenario data

Phase to be released	Liquid	
Tank head	0	m
Hole diameter	60	mm
Discharge coefficient	0,62	fraction

OUTPUT DATA

Mass flow rate	36,6419	kg/s
Release duration	2104,96	s

Orifice or pipe exit data (before atmospheric expansion)

Pressure	1,01325	bar
Temperature	-160,133	degC
Liquid mass fraction	1	fraction
Velocity at vena contracta (at exit for pipe releases)	47,8618	m/s
Discharge coefficient	0,62	

Final Data (after atmospheric expansion)

Temperature	-160,955	degC
Liquid mass fraction	0,99454	fraction
Droplet diameter	318,425	um
Expanded diameter	0,0707001	m
Velocity	47,8618	m/s

Weather: Category 5/D

INPUT DATA

Inventory data

Mass in vessel	77130	kg
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Stagnation Data (upstream end for long pipe)

Initial pressure (gauge)	5	bar
Initial temperature	-160	degC
Fluid state	Non-saturated liquid	

Scenario data

Phase to be released	Liquid	
Tank head	0	m
Hole diameter	60	mm
Discharge coefficient	0,62	fraction

OUTPUT DATA

Mass flow rate	36,6419	kg/s
Release duration	2104,96	s

Orifice or pipe exit data (before atmospheric expansion)

Pressure	1,01325	bar
Temperature	-160,133	degC
Liquid mass fraction	1	fraction
Velocity at vena contracta (at exit for pipe releases)	47,8618	m/s
Discharge coefficient	0,62	

Final Data (after atmospheric expansion)

Temperature	-160,955	degC
Liquid mass fraction	0,99454	fraction
Droplet diameter	318,425	um
Expanded diameter	0,0707001	m



Velocity	47,8618	m/s
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Scenario (Leak) : 300mm

72438-4FSRUInvioGNL-12R\Invio GNL Water\12R Manichette GNL riempimento FSRU\300mm

Weather: Category 2/F

INPUT DATA

Inventory data

Mass in vessel	77130	kg
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Stagnation Data (upstream end for long pipe)

Initial pressure (gauge)	5	bar
Initial temperature	-160	degC
Fluid state	Non-saturated liquid	

Scenario data

Phase to be released	Liquid	
Tank head	0	m
Hole diameter	300	mm
Discharge coefficient	0,62	fraction

OUTPUT DATA

Mass flow rate	916,049	kg/s
Release duration	84,1986	s

Orifice or pipe exit data (before atmospheric expansion)

Pressure	1,01325	bar
Temperature	-160,133	degC
Liquid mass fraction	1	fraction
Velocity at vena contracta (at exit for pipe releases)	47,8618	m/s
Discharge coefficient	0,62	

Final Data (after atmospheric expansion)

Temperature	-160,955	degC
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Liquid mass fraction	0,99454	fraction
Droplet diameter	318,425	um
Expanded diameter	0,353501	m
Velocity	47,8618	m/s

Weather: Category 5/D

INPUT DATA

Inventory data

Mass in vessel	77130	kg
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Stagnation Data (upstream end for long pipe)

Initial pressure (gauge)	5	bar
Initial temperature	-160	degC
Fluid state	Non-saturated liquid	

Scenario data

Phase to be released	Liquid	
Tank head	0	m
Hole diameter	300	mm
Discharge coefficient	0,62	fraction

OUTPUT DATA

Mass flow rate	916,049	kg/s
Release duration	84,1986	s

Orifice or pipe exit data (before atmospheric expansion)

Pressure	1,01325	bar
Temperature	-160,133	degC
Liquid mass fraction	1	fraction
Velocity at vena contracta (at exit for pipe releases)	47,8618	m/s
Discharge coefficient	0,62	

Final Data (after atmospheric expansion)

Temperature	-160,955	degC
Liquid mass fraction	0,99454	fraction
Droplet diameter	318,425	um
Expanded diameter	0,353501	m



Velocity	47,8618	m/s
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