

# Discharge Report

**Workspace: 72438-1RiempFSRU-1R**

**Study: Riempimento FSRU-ME4-Water**

**Equipment Item: 1R Manichette GNL riempimento FSRU**

72438-1RiempFSRU-1R\Riempimento FSRU-ME4-Water\1R Manichette GNL riempimento FSRU

Material	GAS NATURALE	
East	0	m
North	0	m

## Scenario (Leak) : 300mm

72438-1RiempFSRU-1R\Riempimento FSRU-ME4-Water\1R Manichette GNL riempimento FSRU\300mm

**Weather: Category 2/F**

### INPUT DATA

#### Inventory data

Mass in vessel	<b>77130</b>	kg
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#### Stagnation Data (upstream end for long pipe)

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

#### Scenario data

Phase to be released	Liquid	
Tank head	0	m
Hole diameter	<b>300</b>	mm
Discharge coefficient	<b>0,62</b>	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	<b>1</b>	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	<b>0,353501</b>	m
Velocity	47,8618	m/s

## Weather: Category 5/D

### INPUT DATA

#### Inventory data

Mass in vessel	<b>77130</b>	kg
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#### Stagnation Data (upstream end for long pipe)

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

#### Scenario data

Phase to be released	Liquid	
Tank head	0	m
Hole diameter	<b>300</b>	mm
Discharge coefficient	<b>0,62</b>	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	<b>1</b>	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	<b>0,353501</b>	m



Velocity	47,8618	m/s
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## Scenario (Leak) : 60mm

72438-1RiempFSRU-1R\Riempimento FSRU-ME4-Water\1R Manichette GNL  
riempimento FSRU\60mm

**Weather: Category 2/F**

### INPUT DATA

#### Inventory data

Mass in vessel	<b>77130</b>	kg
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#### Stagnation Data (upstream end for long pipe)

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

#### Scenario data

Phase to be released	Liquid	
Tank head	0	m
Hole diameter	<b>60</b>	mm
Discharge coefficient	<b>0,62</b>	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	<b>1</b>	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	<b>0,0707001</b>	m
Velocity	47,8618	m/s

## Weather: Category 5/D

### INPUT DATA

#### Inventory data

Mass in vessel	<b>77130</b>	kg
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#### Stagnation Data (upstream end for long pipe)

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

#### Scenario data

Phase to be released	Liquid	
Tank head	0	m
Hole diameter	<b>60</b>	mm
Discharge coefficient	<b>0,62</b>	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	<b>1</b>	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	<b>0,0707001</b>	m



Velocity	47,8618	m/s
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