

# Discharge Report

**Workspace: 72341-1RiempimFSRU**

**Study: Riempimento FSRU-ME4**

**Equipment Item: 3R Collettore GNL riempimento FSRU**

72341-1RiempimFSRU\Riempimento FSRU-ME4\3R Collettore GNL riempimento FSRU

| Material | GAS NATURALE |   |
|----------|--------------|---|
| East     | 0            | m |
| North    | 0            | m |

## Scenario (Leak) : 120mm

72341-1RiempimFSRU\Riempimento FSRU-ME4\3R Collettore GNL riempimento FSRU\120mm

**Weather: Category 2/F**

### INPUT DATA

#### Inventory data

|                |         |    |
|----------------|---------|----|
| Mass in vessel | 24881,8 | kg |
|----------------|---------|----|

#### 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         | 120    | mm       |
| Discharge coefficient | 0,62   | fraction |

### OUTPUT DATA

|                  |         |      |
|------------------|---------|------|
| Mass flow rate   | 146,568 | kg/s |
| Release duration | 169,763 | 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>0,1414</b> | m        |
| Velocity             | 47,8618       | m/s      |

## Weather: Category 5/D

### INPUT DATA

#### Inventory data

|                |         |    |
|----------------|---------|----|
| Mass in vessel | 24881,8 | kg |
|----------------|---------|----|

#### 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         | 120    | mm       |
| Discharge coefficient | 0,62   | fraction |

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|          |         |     |
|----------|---------|-----|
| Velocity | 47,8618 | m/s |
|----------|---------|-----|

