

Discharge Report

Workspace: 72341-3InvioGN-01

Study: Invio GN a metanodotto

Equipment Item: 11R Metanodotto piattaforma Alt A

72341-3InvioGN-01\Invio GN a metanodotto\11R Metanodotto piattaforma Alt A

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

Scenario (Leak) : 130mm

72341-3InvioGN-01\Invio GN a metanodotto\11R Metanodotto piattaforma Alt A\130mm

Weather: Category 2/F

INPUT DATA

Inventory data

| | | |
|----------------|----------------|----|
| Mass in vessel | 5822,25 | kg |
|----------------|----------------|----|

Stagnation Data (upstream end for long pipe)

| | | |
|--------------------------|------------------------|------|
| Initial pressure (gauge) | 80 | bar |
| Initial temperature | 50 | degC |
| Fluid state | Pressurized gas | |

Scenario data

| | | |
|-----------------------|-------------|----------|
| Phase to be released | Vapour | |
| Hole diameter | 130 | mm |
| Discharge coefficient | 0,62 | fraction |

OUTPUT DATA

| | | |
|------------------|---------|------|
| Mass flow rate | 119,946 | kg/s |
| Release duration | 48,5406 | s |

Orifice or pipe exit data (before atmospheric expansion)

Audit Number: 33729

Date: 23/09/2022 Time: 09:45

Page 1 of 5

| | | |
|--|----------|----------|
| Pressure | 43,4562 | bar |
| Temperature | 3,52734 | degC |
| Liquid mass fraction | 0 | fraction |
| Velocity at vena contracta (at exit for pipe releases) | 404,685 | m/s |
| Discharge coefficient | 0,62 | |

Final Data (after atmospheric expansion)

| | | |
|----------------------|-----------------|----------|
| Temperature | -5,13687 | degC |
| Liquid mass fraction | 0 | fraction |
| Droplet diameter | 0 | um |
| Expanded diameter | 0,810815 | m |
| Velocity | 300 | m/s |

Weather: Category 5/D

INPUT DATA

Inventory data

| | | |
|----------------|---------|----|
| Mass in vessel | 5822,25 | kg |
|----------------|---------|----|

Stagnation Data (upstream end for long pipe)

| | | |
|--------------------------|-----------------|------|
| Initial pressure (gauge) | 80 | bar |
| Initial temperature | 50 | degC |
| Fluid state | Pressurized gas | |

Scenario data

| | | |
|-----------------------|--------|----------|
| Phase to be released | Vapour | |
| Hole diameter | 130 | mm |
| Discharge coefficient | 0,62 | fraction |

OUTPUT DATA

| | | |
|------------------|---------|------|
| Mass flow rate | 119,946 | kg/s |
| Release duration | 48,5406 | s |

Orifice or pipe exit data (before atmospheric expansion)

| | | |
|--|---------|----------|
| Pressure | 43,4562 | bar |
| Temperature | 3,52734 | degC |
| Liquid mass fraction | 0 | fraction |
| Velocity at vena contracta (at exit for pipe releases) | 404,685 | m/s |
| Discharge coefficient | 0,62 | |

Final Data (after atmospheric expansion)

| | | |
|----------------------|----------|----------|
| Temperature | -5,13687 | degC |
| Liquid mass fraction | 0 | fraction |
| Droplet diameter | 0 | um |
| Expanded diameter | 0,810815 | m |
| Velocity | 300 | m/s |

