

Discharge Report

Workspace: 72438-3InvioGN-10R

Study: Invio GN a metanodotto

Equipment Item: 10R Linea di mandata gas

72438-3InvioGN-10R\Invio GN a metanodotto\10R Linea di mandata gas

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

Scenario (Leak) : 81,3 mm

72438-3InvioGN-10R\Invio GN a metanodotto\10R Linea di mandata gas\81,3 mm

Weather: Category 2/F

INPUT DATA

Inventory data

| | | |
|----------------|----------------|----|
| Mass in vessel | 355,227 | kg |
|----------------|----------------|----|

Stagnation Data (upstream end for long pipe)

| | | |
|--------------------------|------------------------|------|
| Initial pressure (gauge) | 100 | bar |
| Initial temperature | 25 | degC |
| Fluid state | Pressurized gas | |

Scenario data

| | | |
|-----------------------|--------------|----------|
| Phase to be released | Vapour | |
| Hole diameter | 81,28 | mm |
| Discharge coefficient | 0,62 | fraction |

OUTPUT DATA

| | | |
|------------------|---------|------|
| Mass flow rate | 67,986 | kg/s |
| Release duration | 5,22501 | s |

Orifice or pipe exit data (before atmospheric expansion)



| | | |
|--|----------|----------|
| Pressure | 53,4682 | bar |
| Temperature | -19,5813 | degC |
| Liquid mass fraction | 0 | fraction |
| Velocity at vena contracta (at exit for pipe releases) | 356,025 | m/s |
| Discharge coefficient | 0,62 | |

Final Data (after atmospheric expansion)

| | | |
|----------------------|-----------------|----------|
| Temperature | -56,7906 | degC |
| Liquid mass fraction | 0 | fraction |
| Droplet diameter | 0 | um |
| Expanded diameter | 0,530104 | m |
| Velocity | 300 | m/s |



Weather: Category 5/D

INPUT DATA

Inventory data

| | | |
|----------------|---------|----|
| Mass in vessel | 355,227 | kg |
|----------------|---------|----|

Stagnation Data (upstream end for long pipe)

| | | |
|--------------------------|-----------------|------|
| Initial pressure (gauge) | 100 | bar |
| Initial temperature | 25 | degC |
| Fluid state | Pressurized gas | |

Scenario data

| | | |
|-----------------------|--------|----------|
| Phase to be released | Vapour | |
| Hole diameter | 81,28 | mm |
| Discharge coefficient | 0,62 | fraction |

OUTPUT DATA

| | | |
|------------------|---------|------|
| Mass flow rate | 67,986 | kg/s |
| Release duration | 5,22501 | s |

Orifice or pipe exit data (before atmospheric expansion)

| | | |
|--|----------|----------|
| Pressure | 53,4682 | bar |
| Temperature | -19,5813 | degC |
| Liquid mass fraction | 0 | fraction |
| Velocity at vena contracta (at exit for pipe releases) | 356,025 | m/s |
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Final Data (after atmospheric expansion)

| | | |
|----------------------|----------|----------|
| Temperature | -56,7906 | degC |
| Liquid mass fraction | 0 | fraction |
| Droplet diameter | 0 | um |
| Expanded diameter | 0,530104 | m |
| Velocity | 300 | m/s |



