

P.O. Box 606 6160 AP Geleen The Netherlands

Q20.1025

10.000
448 = 22.9v
1/2

| rev. | service | Separating solids (polymer powder) | number required | 1 | | | |
|------|----------------------|------------------------------------|------------------------|----------|---|---|---|
| | description | | | | | | |
| | operation | | continuous | | | | |
| | contents | | N ₂ /PA-6.4 | | | | |
| | solids | quantity | kg/h | 10 | | | |
| | | density at norm. oper. P/T | kg/m ³ | 1180 | | | |
| | | viscosity at norm. oper. P/T | mPa.s | | | | |
| | | surface tension at norm. P/T | mN/m | | | | |
| | vapour | quantity | kg/h | 410 | | | |
| | | molecular weight | kg/kmol | 28.01 | | | |
| | | density at norm. P/T | kg/m ³ | 0.914534 | | | |
| | | viscosity at norm. P/T | mPa.s | 0.0239 | | | |
| | oper. temperature | normal | °C | 170 | | | |
| | | maximum | °C | 180 | | | |
| | | minimum | °C | 165 | | | |
| | design temperature | max / min | °C | 250 0 | | | |
| | oper. pressure | normal | bar | 1.2 | | | |
| | | maximum | bar | 1.3 | | | |
| | | minimum | bar | 1.1 | | | |
| | design pressure | max / min | bar | 1.5 0.95 | | | |
| | jacket / coil | | | | | | |
| | heating medium | | | | | | |
| | cooling medium | | | | | | |
| | quantity required | | kg/h | | | | |
| | oper. temperature | normal / max / min | °C | | / | / | / |
| | design temperature | max / min | °C | | | / | |
| | oper. pressure | normal / max / min | bar | | / | / | / |
| | design pressure | max / min | bar | | | / | |

remarks

Pressures referred to are absolute pressures

Continuously, but the gas flow pulsates due to pellet conveying from SSPC-reactor R-1301 to Dryer D-1302.

Pressure starts of at 1.1 bar and increases with every pulse till 1.3 bar, at which point there is enough time for the pressure to return to 1.1 bar again.

Solid recovery efficiency should be 95% or higher.

| rev | date | description | written | chkd | seen | equipment name: |
|-------------------|------|---|---------|------|------|-------------------------------|
| 0 | | first issue | | | | Dryer off-gas cyclone |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | project: |
| 4 | | | | | | plant: STANYL-1 |
| 5 | | | | | | P&ID no. 0957049 |
| DEP Stanyl | | Process data sheet for: Vessels and separators | | | | equipment no. S13XX |

Sheet 1 of 4

P.O. Box 606 6160 AP Geleen The Netherlands

| rev. | engineering & constructional details | | | | |
|------|--------------------------------------|---|------------------------|--|--|
| | description | | | | |
| | diameter of shell (ID) | mm | * | | |
| | length between tangent lines | mm | * | | |
| | overall length | mm | * | | |
| | total volume (between tangent lines) | m ³ | * | | |
| | agitator | <input type="checkbox"/> yes / <input checked="" type="checkbox"/> no | | | |
| | baffles | <input type="checkbox"/> yes / <input checked="" type="checkbox"/> no | | | |
| | demister | <input type="checkbox"/> yes / <input checked="" type="checkbox"/> no | | | |
| | vortex breaker | <input type="checkbox"/> yes / <input checked="" type="checkbox"/> no | | | |
| | | | equip. no. | | |
| | | | corrosion allowance mm | | |
| | shell and heads | SS 304 L or better | | | |
| | jacket / coil | | | | |
| | nozzles | SS 304 L or better | | | |
| | lining / cladding | | | | |
| | internal parts | SS 304 L or better | | | |
| | general remarks | | | | |
| | gaskets | <input checked="" type="checkbox"/> yes / <input type="checkbox"/> no | | | |
| | earth connection | <input type="checkbox"/> yes / <input checked="" type="checkbox"/> no | | | |
| | fire proofing | <input type="checkbox"/> yes / <input checked="" type="checkbox"/> no | | | |
| | insulation | heat loss | | | |
| | additional info | | | | |

notes

* To be determined by manufacturer.

| rev | date | description | written | chkd | seen | equipment name: |
|------------|------|---|---------|------|------|-------------------------------|
| 0 | | first issue | | | | Dryer off-gas cyclone |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | project: |
| 4 | | | | | | plant: STANYL-1 |
| 5 | | | | | | P&ID no. 0957049 |
| DEP Stanyl | | Process data sheet for: Vessels and separators | | | | equipment no. S13XX |

Sheet 2 of 4

P.O. Box 606 6160 AP Geleen The Netherlands

| rev. | nozzle data (nominal size) | | |
|------|----------------------------|---------------|-----------------------------------|
| | code | diameter inch | service |
| | B1 | 6" *1 | N ₂ /PA-6.4 Dust Inlet |
| | B2 | 6" *1 | N ₂ Outlet |
| | B3 | 2" *2 | PA-6.4 Dust Outlet |

notes

*1: Plant is engineered following ANSI standards; B1/B2 are 6" sch.10 pipes.

*2: B3 can be discussed.

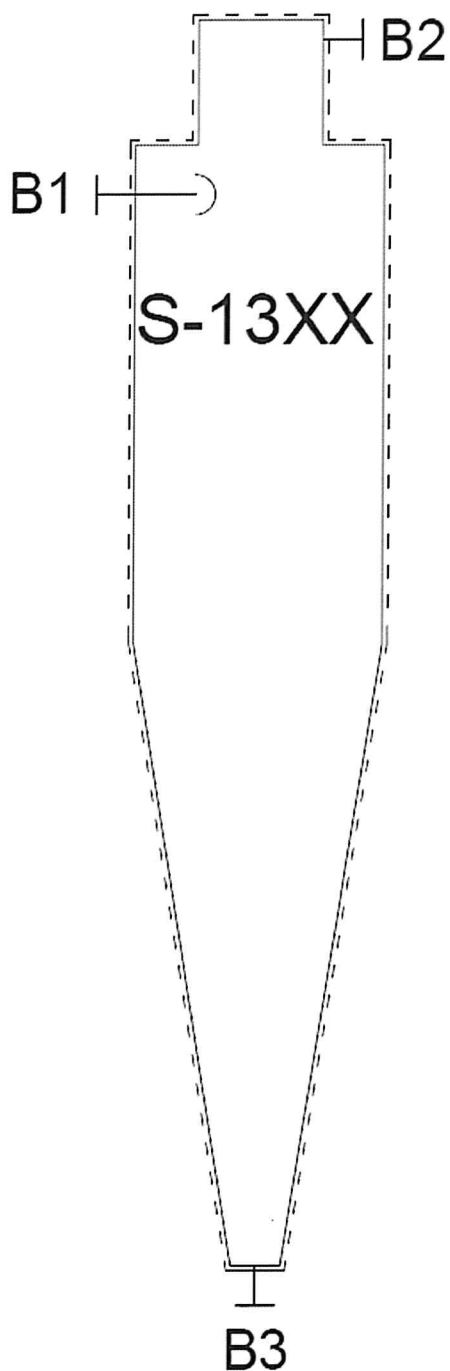
All nozzles must extend through the insulation.

| rev | date | description | written | chkd | seen | equipment name: |
|------------|------|---|---------|------|------|-------------------------------|
| 0 | | first issue | | | | Dryer off-gas cyclone |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | project: |
| 4 | | | | | | plant: STANYL-1 |
| 5 | | | | | | P&ID no. 0957049 |
| DEP Stanyl | | Process data sheet for: Vessels and separators | | | | equipment no. S13XX |

Sheet 3 of 4

P.O. Box 606 6160 AP Geleen The Netherlands

drawing



*B2 is allowed to exit through the top or side; to be discussed.

| rev | date | description | written | chkd | seen | equipment name: |
|------------|------|---|---------|------|------|------------------------|
| 0 | | first issue | | | | Dryer off-gas cyclone |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | project: |
| 4 | | | | | | plant: STANYL-1 |
| 5 | | | | | | P&ID no. 0957049 |
| DEP Stanyl | | Process data sheet for: Vessels and separators | | | | equipment no. S13XX |

Sheet 4 of 4

P.O. Box 606 6160 AP Geleen The Netherlands

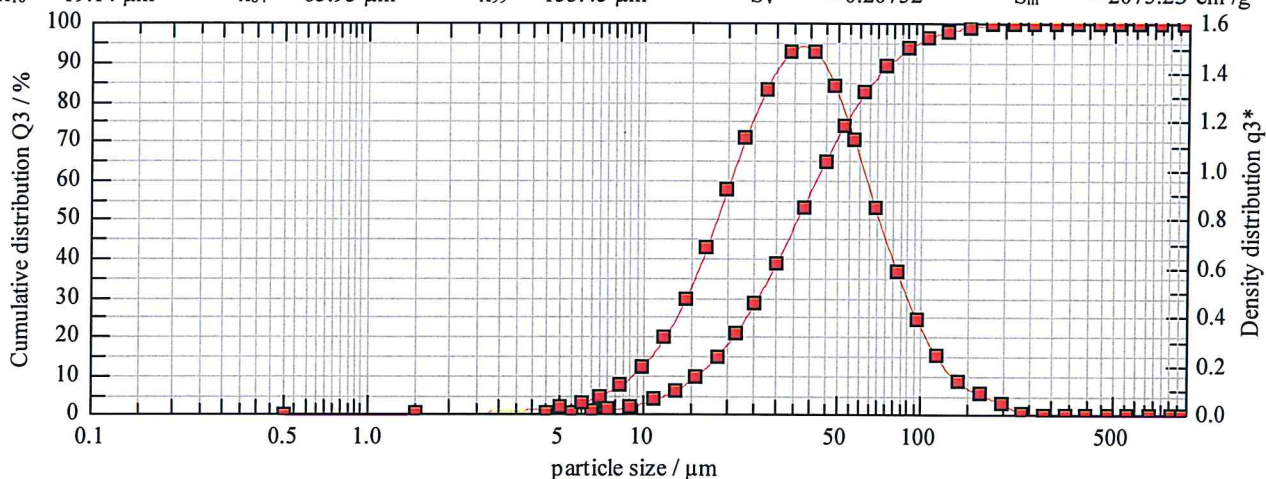
Notes :

Particle size distribution of the dust carried with the nitrogen when exiting the dryer D-1302.

HELOS (H3319) & RODOS, R5: 0.5/4.5...875µm

2020-01-21, 09:16:30,921

$x_{10} = 15.79 \mu\text{m}$ $x_{50} = 35.97 \mu\text{m}$ $x_{90} = 78.71 \mu\text{m}$ **SMD = 28.91 µm** **VMD = 43.13 µm**
 $x_{16} = 19.14 \mu\text{m}$ $x_{84} = 65.93 \mu\text{m}$ $x_{99} = 153.45 \mu\text{m}$ $S_v = 0.20752$ $S_m = 2075.23 \text{ cm}^2/\text{g}$



comment:

user parameters:

user: R. de Groot
batchnumber: Stanyl - 00813; 13-1-2020
P3:

cumulative distribution

| $x_0/\mu\text{m}$ | $Q_3/\%$ | $x_0/\mu\text{m}$ | $Q_3/\%$ | $x_0/\mu\text{m}$ | $Q_3/\%$ | $x_0/\mu\text{m}$ | $Q_3/\%$ |
|-------------------|----------|-------------------|----------|-------------------|----------|-------------------|----------|
| 4.50 | 0.04 | 18.50 | 14.73 | 75.00 | 88.86 | 305.00 | 100.00 |
| 5.50 | 0.27 | 21.50 | 20.71 | 90.00 | 93.48 | 365.00 | 100.00 |
| 6.50 | 0.61 | 25.00 | 28.10 | 105.00 | 96.05 | 435.00 | 100.00 |
| 7.50 | 1.06 | 30.00 | 38.59 | 125.00 | 97.86 | 515.00 | 100.00 |
| 9.00 | 1.98 | 37.50 | 52.93 | 150.00 | 98.92 | 615.00 | 100.00 |
| 11.00 | 3.67 | 45.00 | 64.66 | 180.00 | 99.58 | 735.00 | 100.00 |
| 13.00 | 5.93 | 52.50 | 73.66 | 215.00 | 99.95 | 875.00 | 100.00 |
| 15.50 | 9.50 | 62.50 | 82.16 | 255.00 | 100.00 | | |

| rev | date | description | written | chkd | seen | equipment name: |
|------------|------|---|---------|------|------|-------------------------------|
| 0 | | first issue | | | | Dryer off-gas cyclone |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | project: |
| 4 | | | | | | plant: STANYL-1 |
| 5 | | | | | | P&ID no. 0957049 |
| DEP Stanyl | | Process data sheet for: Vessels and separators | | | | equipment no. S13XX |

Sheet 5 of 4