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http://www.cheresources.com/cheplusstore/catalogue.php

Clicking the above link should activate your default browser and launch the site.

We recommend using our search feature to find the title.

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Content Based Chemical Engineering

WEIR FLOW - Rectangular & Triangular Pattern

BASIS:

PERRY'S CHEMICAL ENGINEERS HANDBOOK (Francis formula)

LIMITS: The formulas are based on water and should only be used for "WATER-LIKE" fluids. Error should be less than 10% (low) for viscosities up to 100 cp. Do not use for viscous liquids or high surface tension liquids.

NOTE: Always begin a new case by retrieving the original file. Direct entry of data in cells that originally contain table lookups could cause functions to be lost, or incorrect calculations. I format cells requiring entry colored RED; calculated values are black.

Weir - Rectangular Notch

- 1.) Enter identification at [C4].
- 2.) Enter fluid name at [C5].
- 3.) Enter specific gravity at [C6].
- 4.) Enter fluid height at [E8].
- 5.) Enter weir length at [E9].

Flow `Q' is calculated and shown at [E15].

Weir - 90 deg Triangular Notch

- 1.) Enter identification at [C4].
- 2.) Enter fluid name at [C5].
- 3.) Enter specific gravity at [C6].
- 4.) Enter fluid height at [E8].

Flow `Q' is calculated and shown at [E14].

Print out using direct Excel commands. This application is provided by Chemical Engineers Resource Website, vischeresources.com for additional selections.

Print out using direct EXCEL commands.



Weir Flow - Rectangular Pattern "Francis Formula"

```
WEIR : Overflow - New Storage Tank 11-1876
          Fluid : WATER
Specific Gravity :
                   1.00
                             Height, H:
                                           1.10
                                                    in. = 0.09 ft., ... fluid height
                             Length, L :
                                                    in. = 3.28 ft., ... weir width
                                           39.30
                                   Q = 3.33 * (L - 0.2 * H) * H^{1.5}
                                                    cu. ft./sec.
                                           0.301
                                      =
                                            135
                                                    gal/min
                                      =
                                           67539
                                                    lb/hr
                                      =
```

weir

Weir Flow - Rectangular Pattern "Francis Formula"

```
WEIR : Overflow - New Storage Tank 11-1876
Fluid : WATER
Specific Gravity : 1.00
```

Height, H :27.94mm, ... fluid heightLength, L :998.22mm, ... weir width

$$Q := \left[\frac{3.33 \cdot (L - 0.2 \cdot H) \cdot H^{1.5}}{35.315}\right]$$

 $= 0.0085227 \text{ m}^3/\text{sec}$

= 8.5227468 kg/sec

Weir Flow - 90 Degree Triangular Notch

```
WEIR : Process Sewer Outlet
Fluid : WATER
Specific Gravity : 1.00
```

Height, H : 12.00 in. = 1.00 ft., ... fluid height

 $Q = 2.49 * H^{2.5}$

| = | 2.49 | cu. ft./sec. |
|---|------|--------------|
| = | 1118 | gal/min |

= 558756 lb/hr

Weir Flow - 90 Degree Triangular Notch

WEIR : Process Sewer Outlet Fluid : WATER Specific Gravity : 1.00

Height, H : 304.80 mm, ... fluid height

$$\mathsf{Q} := \left(\frac{2.49 \cdot \mathsf{H}^{2.5}}{35.315}\right)$$

- $= 0.07050895 \text{ m}^3/\text{sec}$
- = 70.5089475 kg/sec