

**G60-MB-24-C02 / Activated Carbon Filter Data Sheet**

Engineered by:



Doc No. OPAR1-MSF52228-G60UO24C01-504  
 Project No. J-1254  
 Project Name/Location CAFC-Block 405B / Algeria (Design Case1: Year7 Summer  
 End User SONATRACH First Calgary Petroleums  
 Customer Daewoo E&C

Rev 0  
 Date 2-Sep-15

Prepared J.M  
 Checked H.I  
 Approved S.H

Equipment Tag No. G60-MB-24-C02 Onshore/Offshore Onshore  
 Equipment Name Activated Carbon Filter Sour Service No NACE Region -  
 Service Rich Glycol Quantity 1

**DESIGN BASIS**

Operating condition		Rich TEG-
		RG45
Temperature	[C]	<u>56</u>
Pressure	[barg]	<u>3.80</u>
Normal Flowrate	[kg/h]	<u>408.54</u>
10 % Flowrate	[m3/h]	<u>0.38</u>
	[m3/min]	<u>0.01</u>
Design Flowrate		
	[USGPM]	<u>0.38</u>
	[m3/min]	<u>0.01</u>
Density	[kg/m3]	<u>1,060.85</u>
Viscosity	[cp]	<u>9.58</u>
Surface tension	[dyne/cm]	<u>42.81</u>
Molecular weight		<u>115.24</u>
p CO <sub>2</sub>	[bara]	<u>0.42</u>
p H <sub>2</sub> S	[bara]	<u>0.000</u>

**FILTER SIZING**

Pressure drop		
-Clean	[bar]	<u>0.14</u>
-Maximum allowable	[bar]	<u>0.70</u>
Carbon filter capacity	[USGPM/Element]	<u>1.2</u>
Required no. of elements		<u>1.38</u>
Selected no. of elements		<u>2</u>

Filter element size	<u>φ280mm x 563 mm L</u>
Filter element type	<u>Activated Carbon Filter with 316 Cannister</u>
Filter manufacturer/type	<u>Glytech/EP-01122C-G</u>

Skid layout Minimum space

**VESSEL SIZING**

Required Vessel I.D	[ft]	<u>1-1.4"</u>
	[mm]	<u>337</u>
Vessel T/L - Flange hub	[ft]	<u>5-1.7"</u>
	[mm]	<u>1550</u>
Quick opening closure QOC		<u>Swing Bolt Type</u>

**DESIGN SUMMARY**

Design Code	<u>ASME SEC.VIII DIV.1</u>		
U-Stamp	<u>Yes</u>		
Type	<u>Vertical</u>		
Fluid name	<u>Rich Glycol</u>		
Lethal service	<u>No</u>		
Special service	<u>No</u>		
Operating temperature	[C]	<u>56</u>	
Design temperature	[C]	<u>125</u>	MDMT <u>-5</u>
Operating pressure	[barg]	<u>3.80</u>	
Design pressure	[barg]	<u>10.50</u>	FV <u>Yes</u>
Corrosion allowance	[mm]	<u>N/A</u>	<u>-</u>
Insulation		<u>Yes - HC</u>	[mm] <u>40</u>
Fire proofing	[mm]	<u>No</u>	
Blast load	[barg]	<u>No</u>	

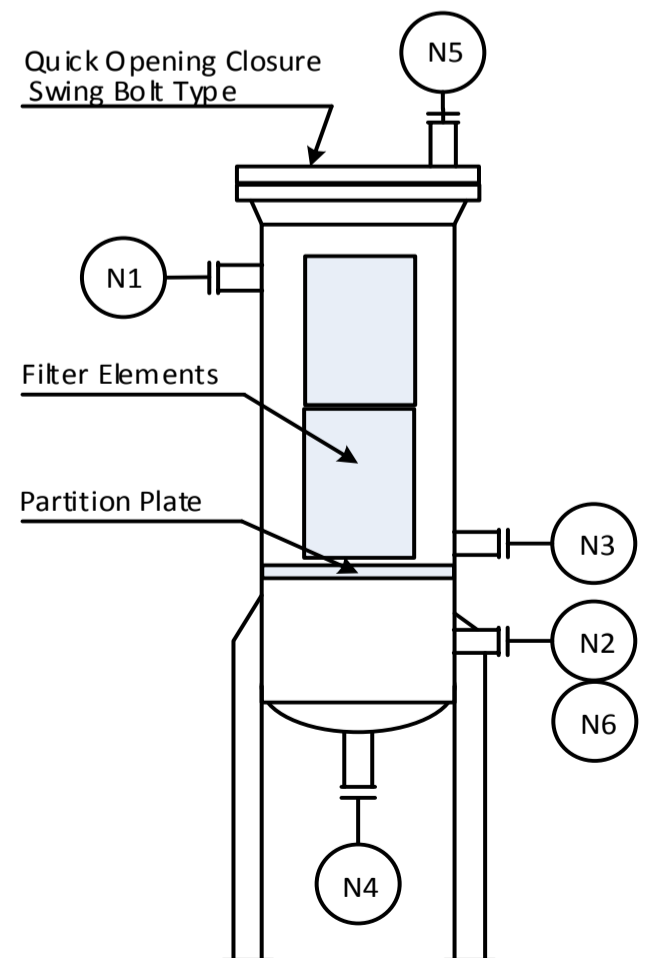
**Material of Construction**

Shell	<u>SA240 316L</u>
Head	[Flange] Top <u>SA105N + 316L SS Weld Overlay</u> [Elliptical 2:1] Bottom <u>SA240 TP 316L</u>
Internal	<u>316L SS</u>

Shell OD	[inch]	<u>14</u>
	[mm]	<u>356</u>
	[thick / mm]	<u>8</u>
Vessel T/L - Flange hub	[ft]	<u>5-1.7"</u>
	[mm]	<u>1,550</u>

Support Type Support Leg

Nozzle ID	Qty	Flange			Description
		Size (in)	Rating	Face	
N1	1	2	150#	RF	Glycol Inlet
N2	1	2	150#	RF	Glycol Outlet
N3	1	2	150#	RF	Glycol Upper Drain
N4	1	2	150#	RF	Glycol Lower Drain
N5	1	2	150#	RF	Vent
N6	1	2	150#	RF	Utility Conn.



**NOTE(S)**

1. Partition plate to be designed to withstand with diff. pressure at 3.5 bar.
2. Equipment shall be designed in accordance with the Algerian State Authority (ARH). Inspection Authority: Algerian State Authority (ARH)  
The hydraulic test pressure shall not be less than 1.5 x design pressure or ASME code test pressure, but must not exceed 90% yield stress.
3. ARH code stamp required for vessel.