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	C2/C3 :
	FR-FO-701-01 :
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**C2/C3**

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**C2/C3**



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## C2/C3 FEED

FUEL GAS			
TYPICAL TEST	UNIT	SPECIFICATION	TEST METHOD
WATER CONTENT	PPM	0.5 MAX	GC



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**1- FUEL GAS FEED**

**1-1- FEED GAS SPECIFICATION (SUMMER CONDITION ,100% LOAD)**

	DRY FEED		WET FEED	
STREAM NO.	1+11+2+22		3+33	
COMPONENT	KMOL/H	MOL-%	KMOL/H	MOL-%
H2O,MAX		1)	2.031	0.391
H2S,MAX		1)	0.020	0.0039
CO2,MAX	8.601	1.40	3.963	0.763
METHANE	119.538	19.50	90.702	17.464
ETHANE	483.548	78.88	278.444	49.47 TO 57.75
PROPANE	1.360	0.22	143.307	23.45 TO 31.73
I-BUTANE		1)	0.781	0.150
N-BUTANE		1)	0.121	0.023
<b>TOTAL (KMOL/H)</b>	<b>613.05</b>		<b>519.36</b>	
<b>TOTAL(KG/H)</b>	<b>16,897</b>		<b>16,411</b>	
<b>TEMP.(°C)</b>	<b>2.0</b>		<b>43.0</b>	
<b>PRESS.(KG/CM²)AT TIE-IN OF EXISTING PLANT</b>	<b>&gt;18.4(AT EXISTING 8" HEADER)</b>		<b>&gt;21.0-22.4(UPSTREAM OLD PCVs)</b>	
<b>MAX.PRESS.DROP BETWEEN TIE-IN AND PLANT B.L.(KG/CM²)</b>	<b>&lt;0.6(MAX.320M DISTANCE)</b>		<b>&lt;1.2(MAX. DISTANCE 440 M PLUS NEW CV)</b>	
<b>PRESS.(KG/CM² A)AT PLANT B.L</b>	<b>&gt;17.8</b>		<b>&gt;19.8</b>	

**1-CONCENTRATION OF COMPONENT IS EXPECTED TO BE NIL.**

**1-2- FEED GAS SPECIFICATION (WINTER CONDITION ,100% LOAD)**



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	DRY FEED		WET FEED	
STREAM NO.	1+11+2+22		3+33	
COMPONENT	KMOL/H	MOL-%	KMOL/H	MOL-%
H2O,MAX		2)	0.961	0.391
H2S,MAX		2)	0.010	0.0041
CO2,MAX	8.601	1.40	1.875	0.763
METHANE	119.538	19.50	42.906	17.468
ETHANE	483.548	78.88	131.714	49.47 TO 57.75
PROPANE	1.360	0.22	67.789	23.45 TO 31.73
I-BUTANE		2)	0.369	0.150
N-BUTANE		2)	0.057	0.023
<b>TOTAL (KMOL/H)</b>	<b>613.05</b>		<b>245.68</b>	
<b>TOTAL(KG/H)</b>	<b>16,897</b>		<b>7,763</b>	
<b>TEMP.(°C)</b>	<b>2.0</b>		<b>43.0</b>	
<b>PRESS.(KG/CM²A)AT TIE-IN OF EXISTING PLANT</b>	<b>&gt;18.4(AT EXISTING 8" HEADER)</b>		<b>&gt;21.0-22.4(UPSTREAM OLD PCVs))</b>	
<b>MAX.PRESS.DROP BETWEEN TIE-IN AND PLANT B.L.(KG/CM²)</b>	<b>&lt;0.6(MAX.320M DISTANCE)</b>		<b>&lt;1.2(MAX. DISTANCE 440 M PLUS NEW CV)</b>	
<b>PRESS.(KG/CM² A)AT PLANT B.L</b>	<b>&gt;17.8</b>		<b>&gt;19.8</b>	

2-CONCENTRATION OF COMPONENT IS EXPECTED TO BE NIL.

### 1.3- TEST METHODS FOR FEED GAS

COMPONENT	TEST METHOD FOR STREAM 1+11+2+22	TEST METHOD FOR STREAM 3+33
H2S		ASTM D-6228
CO2	GC	GC
METHANE	GC	GC
ETHANE	GC	GC
PROPANE	GC	GC
I-BUTANE	-	GC
N-BUTANE	-	GC



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## 2- PRODUCTS

### 2-1- C2-PRODUCT

ITEM	UNIT	SPECIFICATION	TEST METOD
ETHANE	MOL-%	97.84 MIN	GC
PROPANE	MOL-%	1.21 MAX	GC
CARBON DIOXIDE	MOL-%	0.2 MAX	GC
METHANE	MOL-%	BLANCE	GC
PRESSURE AT TIE-IN <sup>3)</sup>	KG/CM <sup>2</sup> a	21.2 MIN	-
PRESSURE AT B.L. <sup>3)</sup>	KG/CM <sup>2</sup> a	21.95 MIN	-
PHASE	-	VAPOR	-

3-FOR THE DISTANCE OF 405 M BETWEEN PLANT B.L. AND TIE-IN POINT A MAXIMUM PRESSURE DROP OF 0.75KG/CM<sup>2</sup>(SUM OF ALL PRESSURE DROPS)MUST NOT BE EXCEEDED.

### 2.2- C3-PRODUCT

#### C3-PRODUCT SPECITICATION:

ITEM	UNIT	SPECIFICATION	TEST METOD
PROPANE	MOL-%	98 MIN	GC
HYDROGEN SULPHIDE	WT-PPM	5 MAX	ASTM D-2420DRAGER
ETHANE	MOL-%	0.4 MAX	GC
BUTANE	MOL-%	BALANCE	GC
SULPHUT(VOLATILE)100° F	WT-PPM	30 MAX	MICROCOULOMETR Y
VAPOR PRESSURE 100°F	PSIA	200 MAX	ASTM D-1267
PRESSURE AT TIE-IN <sup>4)</sup>	KG/CM <sup>2</sup> a	4.8 MIN	-
PRESSURE AT B.L. <sup>4)</sup>	KG/CM <sup>2</sup> a	5.2 MIN	-
PHASE	-	LIQUID	-



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**4-FOR THE DISTANCE OF 115 M BETWEEN PLANT B.L. AND TIE-IN POINT A MAXIMUM PRESSURE DROP OF 0.4KG/CM<sup>2</sup>(SUM OF ALL PRESSURE DROPS)MUST NOT BE EXCEEDED.**

### 2.3- LIGHT FUEL GAS

**LIGHT FUEL GAS PRODUCT SPECIFICATION:**

ITEM	UNIT	SPECIFICATION
H2S CONTENT	MOL-PPM	20 MAX
PRESSURE AT TIE-IN <sup>5)</sup>	KG/CM <sup>2</sup> a	13.0 MIN
PRESSURE AT B.L. <sup>5)</sup>	KG/CM <sup>2</sup> a	13.5 MIN
PHASE	-	VAPOR

**5-FOR THE DISTANCE OF 280 M BETWEEN PLANT B.L. AND TIE-IN POINT (FUEL GAS HEADER)A MAXIMUM PRESSURE DROP OF 0.5KG/CM<sup>2</sup>(SUM OF ALL PRESSURE DROPS)MUST NOT BE EXCEEDED.**

### 2.4-TEST METHODS FOR LIGHT FUEL GAS PRODUCT

COMPONENT	TEST METHOD
H2S	ASTM D-2420 / DRAGER TUBES
CO2	GC
METHANE	GC
ETHANE	GC
PROPANE	GC





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## C2/C3 PRODUCTION

<b>REFRIGERATED PROPANE ( LPG )</b>			
TYPICAL TEST	UNIT	SPECIFICATION	TEST METHOD
ETHANE	MOL %	0.4 MAX	G.C
PROPANE	MOL %	98 MIN	G.C
BUTANE	MOL %	1.4 MAX	G.C
PENTANES AND HEAVIER	MOL %	0.01 MAX	G.C
COPPER CORROSION *	---	NO. 1 a MAX	ASTM D-1838
HYDROGEN SULFIDE *	VOL PPM	5 MAX	ASTM D-2420/DRAGER
SPECIFIC GRAVITY AT 60° F/60°F *	----	TO BE REPORTED	ASTM D-2598
SULFUR (VOLATILE) *	WT PPM	30 MAX	BASED ON ASTM D- 3246
VAPOR PRESSURE AT 100°F *	PSIA	200 MAX	ASTM D-2598
WATER CONT ENT *	VOL PPM	PASS	ASTM D-2713

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## C2/C3 PRODUCTION

ETHANE			
TYPICAL TEST	UNIT	SPECIFICATION	TEST METHOD
METHANE	MOL %	0.972 BALANC	GC
CO2	MOL %	0.2 MAX	GC
ETHANE	MOL %	97.84 MIN	GC
PROPAN	MOL %	1.21MAX	GC



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## مولكولار سيو

### 1- TECHNICAL SPECIFICATION OF ADSORBENTS

ADSORBENT TYPE	MOLECULAR SIEVE LINDE ADSORBENT LMS G30C
SERVICE	FEED GAS DRIER
VESSEL	A-1061A/B
MANUFACTURER	GRACE
FIRST CHARGE	2*2750KG
PARTICLE FORM	BEAD
PARTICLE SIZE	1.6-3 MM
BULK DENSITY (MIN.)	690±20KG/M <sup>3</sup>
MOISTURE CONTENT	<1.5 WT-%
ON STREAM TIME	12H
LIFE TIME	3 YEARS (EXPECTED)



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### اكتيويته كربين

ADSORBENT TYPE	ACTIVATED CARBON LINDE ADSORBENT LAC
SERVICE	OIL ADSORBER
VESSEL	A-1062
MANUFACTURER	SEE ADSORBENT SUPPLIER COMPARISON
FIRST CHARGE	1000 KG
PARTICLE FORM	PELLET OR EXTRUDATE
PARTICLE SIZE	4 MM
APPARENT DENSITY	470±20KG/M <sup>3</sup>
MOISTURE CONTENT AS PACKED	≤ 5WT-%
HARDNESS NO	≥ 95
ON STREAM TIME	12 MONTHS
LIFE TIME	12 MONTHS



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مشخصات روغن های مصرفی کمپرسورهای واحد C2/C3

کمپرسور اتان

**Physical and Chemical Properties**

**Trade Name: CP- 1005 -100**

<b>Flash point</b>	<b>243 Deg. C, 470 Deg. F COC (Typical)</b>
<b>Specific Gravity</b>	<b>0.89 (15.6 Deg. C)</b>
<b>Viscosity</b>	<b>93 Centistoke (40 Deg. C) 12 Centistoke (100 Deg. C)</b>
<b>Pour Point Temperature</b>	<b>-35 Deg. C, -37 Deg. F</b>
<b>Melting / Freezing Point</b>	<b>Not Determind</b>



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کمپرسور پروپان

**Physical and Chemical Properties**

**Trade Name: CP- 1516 -100**

<b>Flash point</b>	> 218 Deg. C, 424.4 Deg. F COC (Minimum)
<b>Specific Gravity</b>	1 (15.6 Deg. C)
<b>Vapour Pressure</b>	< 0.01 mm Hg (20 Deg. C)



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Large rounded rectangular frame containing a smaller rounded rectangular frame in the center, intended for a drawing or diagram.





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ITEM	UNIT	D.M WATER	DRINK. WATER
T.H	PPM	—	300 MAX
CONDUCT.	$\mu$ Sim/cm	10MAX	585~2300
CL <sub>2</sub>	PPM	—	0.5 MAX
Ca <sup>2+</sup>	PPM	—	—
PH	—	6-9.5	5.8~8.6
SiO <sub>2</sub>	PPM	0.3 MAX	—
TURBIDITY	N.T.U.	—	2 MAX
CL <sup>-</sup>	PPM	—	—
M. ALK	PPM	3 MAX	—

### HIGH PRESS. STEAM

ITEM	UNIT	SPEC.
PH	—	7~8.5
CONDUCT.	$\mu$ Sim/cm	0.02 MAX
T.H	PPM	TRACE
CL <sup>-</sup>	PPM	TRACE
SiO <sub>2</sub>	PPM	0.02 MAX *

\* FOR AR PLANT = 0.01 MAX

### NITROGEN

ITEM	UNIT	SPEC.
PURITY	—	99.9%
O <sub>2</sub> CONT.	PPM	10 MAX



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## POWER

ITEM	UNIT	SPEC.
VOLTAGE	KW	66
FREQUENCY	HZ	50

## INSTRUMENT & PLANT AIR

ITEM	UNIT	QUANTITY	
		INTSTRUMENT	PLANT
DEW POINT	°C	-40 MIN	—
PRESURE	kg/cm <sup>2</sup> G	6.5 ~ 9	5.5~9
TEM.	°c	AMB.	AMB.