This data sheet describes the design of CMB-R Storage Tank Pump G1-720/1

ThIs pump is designed to transfer CMB-R batch towards F1-702 A/B and also use for mixing via kickback line. CMB-R liquid is composed of 72.1% water + 6.8% Bromide + 3.6% Co/Mn Metal Ions + 17.5% Acetic Acid.

One pump is to be installed, with one on standby.

		CASE NUMBER		
		1 NORMAL FLOW	2	3
DESCRIPTION		CMB-R Storage Tank Pump		
FLUID NAME		CMB-R Liquid	_	_
TYPICAL FLUID COMPOSITION		72.1% water + 6.8% Bromide + 3.6% Co/Mn Metal Ions + 17.5% Acetic Acid	_	_
TEMPERATURE	oC	65	_	_
MIN / MAX TEMPERATURE	oC	AMBIENT/ 85	_	_
SOLID CONTENT	%	Note 2	_	_
SUSPENDED PARTICLE SIZE RANGE	micron	< 840	_	_
SUSPENDED PARTICLE DENSITY	Kg/m3		_	_
GAS CONTENT	ml/m3	_	_	_
FLUID CHRACTERISTICS	(TOXIC / CORROSIVE / ODOROUS)			
ZONE CLASSIFICATION	ZONE 2 Gas GROUP IIA, T4			
		FLUID FLOWS AND PHYSICAL PROPERTIES		
PROCESS DESIGN FLOWS ARE % OF FLOWSHEET		100	_	_
FLOWRATE	m3/hr	15 NOTE 1	_	_
SPECIFIC HEAT	J/kg.c	-	_	_
POUR /MELT POINT	C	-	_	_
FLASH POINT	C	-	_	_
ATMOSPHERIC BOILING POINT	C	-	_	_
TLV	ppm	-	_	_
VAPOR PRESSURE AT OP TEMP	bara	0.25	_	_
VISCOSITY AT OPERATING TEMP	cp	1.2	_	_
SPECIFIC GRAVITY AT OPERATING TEMP		1.2	_	_
		SUCTION SYSTEM CHARACTERISTICS		
MIN / MAX PRESSURE IN VESSEL	bara	1.01 /	_	_
STATIC HEAD ABOVE PUMP	m	-	_	_
PRESSURE DROP EQUIPMENT	bara	-	_	_
PRESSURE DROP CONTROL VALVES	bara	-	_	_
PRESSURE DROP ORIFICE PLATE	bara	-	_	_
PRESSURE DROP PIPE WORK ETC	bara	-	_	_
PRESSURE AT PUMP FLANGE	bara	1.01	_	_
PRESSURE AT PUMP FLANGE	m		_	_
N.P.S.H (AVAILABLE)	m	4	_	_
		DELIVERY SYSTEM CHARACTERISTICS		
MAX PRESSURE IN VESSEL	bara	1.01	_	_
STATIC HEAD ABOVE PUMP	bara	-	_	_
PRESSURE DROP EQUIPMENT	bara	-	_	_
PRESSURE DROP CONTROL VALVES	bara	-	_	_
PRESSURE DROP ORIFICE PLATE	bara	-	_	_
PRESSURE DROP PIPE WORK ETC	bara	-	_	_
PRESSURE AT PUMP FLANGE	bara	4.26	_	_
PRESSURE AT PUMP FLANGE	m		_	_
DIFFERNTIAL HEAD ACROSS PUMP	m	36	_	_
IS THIS THE MAX PUMP HEAD REQUIRED			_	_
PIPE WORK ELEVATION SKETCH (DIMENSIONED) ATTACHED				
PUMP CURVE REQUIRED	Yes			
SUGGESTED RELIEF VALVE SETTING ,INLET DISCHARGE		_ \ _		
INSULATION NO		TRACING NO		JACKATING NO
ADDITIONAL COMMENTS				

NOTE 1. Vendor to Confirm that this pump is able to perform 120% of flowsheet condition

2. Undissolved metals are present.

MECHANICAL DATA

SUGGESTED DESIGN PRESSURE	VTA	bar g			SUGGESTED DESIGN TEMPERATURE	VTA	oC	
SUGGESTED CONSTRUCTION MATERIAL	Ductile iron (Tefzel Lined)	CASING	Silicon carbide	SHAFT	CFR Tefzel	IMPELLER		
RUNNING TIME	CONTINUOUS 8000	h/yr	STARTS/YEAR	300	PARALLEL PUMP ASSUMED	NO		
CONTROL BY	THROTTLING							
SIGNIFICANT RNNING AT NO FLOW	NO							
DRIVE	ELECTRIC MOTOR	Exd IIB T4, IP55, TEFC	Insulation	F				
C/V STROKE TIME <D/24					NARROW BAND OR FAST INTEGRAL CONTROL			

MACHINES DATA CONFIRMED

MANUFACTURER	TYPE	CENTRIFUGAL	MODEL NO			
TYPE OF SEAL	Double Mechanical Seal					
DESIGN PRESSURE	VTA	barg				
MATERIAL OF CONST.	CASING	VTA	SHAFT	IMPELLER		
PUMPS IN PARALLEL	VTA		NUMBER IN PARALLEL	VTA		
C/V LOSS CASE	VTA	m	BYPASS FLOW	VTA	m3/hr	
SHUT OFF HEAD	VTA	m				
N.P.S.H REQUIRED	VTA	m				
IMPELLER DIA FITTED	VTA	mm	SPEED	VTA	rpm	
IMPELLER DIA MAX	VTA	mm	IMPELLER DIA MIN	VTA	mm	
NOISE RATING	VTA	NR/db(A)				

SERVICE REQUIRED

ELECTRICITY	400	VOLTS	3	PHASE	50 ± 2 HZ
WATER	barg				m3/hr
STEAM	barg				kg/hr

PUMP CURVE SUPPLIED

ADDITIONAL COMMENTS:

NOTES:

1. PLANT WILL BE OPERATIONAL 365 DAYS/YEAR.
2. VTA stands for vendor to access
3. For establishing the casing design pressure, supplier shall use the max achieveable pump discharge pressure. (Shut-off head condition, with max impeller size, max. SG and max. suction pressure)
4. Guards shall be designed to be easily removable and not to come in contact with moving parts and cause sparking. Access to lubrication points shall be possible without removal of guards.
5. Arrows indicating the direction of rotation shall be permanently and distinctly marked on the equipment.
6. Fasteners for indication plates nameplates etc. shall not penetrate the machine casing.
7. vendor to specify protection against minimum or no flow if required.
8. This pumps is used for mixing through kickback line and for transfer after completion of mixing. Vendor to specify the minimum process flow requirement through kickback in this scenario.
9. Supplier shall confirm that the equipment service life is in excess of 20,000 hours.
10. Vendor to provide seal leakage protection as fluid is highly corrosive.
11. Vendor to specify the seal flush API plan.