

Request For Proposal For The Supply, Delivery, Installation and Commissioning Of Reverse Osmosis Water Treatment System, Centralised Acid Concentrate Delivery System and Haemodialysis Machines

REQUIREMENT SPECIFICATIONS

Specification of Centralised Acid Concentrate Delivery System (CDS)				
Description of function				
Centralised Acid Concentrate Delivery System (CDS) is a system that, mixes, stores and distribute the prepared Acid concentrate for haemodialysis.				
General Specification				
S/No	Parameters	Specifications		Comply (Yes/No)
1	Centralised Acid Concentrate Delivery System (CDS): A complete system that consists of the Mixer , Storage tanks, Distribution and control panel, Distribution loops, Supply connectors to the haemodialysis machines, QC morning system etc.	The system must be able to mix at least two Acid concentrate as per NKF requirement. (NKFS 06 & NKFS 07 Acid Concentrates) with two storage tanks for each concentrates. The distribution and supply of Acid concentrates through high medical grade PEX pipes to the haemodialysis machines. The system should be able to monitor the quality of mixed concentrate.		
2	Mixing System: The system which mixes the dry Acid concentrate powder with the specified concentration.	The mixing system must be able to mix at least two Acid concentrates as per NKF requirement. The mixing capacity is to be minimum of 500 L/Cycle.		
3	Type of Concentrate: The system able to mix various concentrate types as per NKF requirement.	NKFS - 06 Na+ = 140 mmol/L Ca++ = 1.25 mmol/L Mg++ = 0.37 mmol/L K+ = 2 mmol/L Cl- = 110.3 mmol/L HCO3 = 31 mmol/L Acetate = 4 mmol/L Glucose = 1 g/L Osmolarity = 294 mOsm/L	NKFS - 07 Na+ = 140 mmol/L Ca++ = 1.50 mmol/L Mg++ = 0.50 mmol/L K+ = 2 mmol/L Cl- = 111 mmol/L HCO3 = 32 mmol/L Acetate = 3 mmol/L Glucose = 0.9 g/L Osmolarity = 295 mOsm/L	
4	Quality Control and Monitoring: The system able to verify mixed concentrates within specified limits	The system must have facility to measure and monitor the quality control of mixed concentrate either by manual method or automatic method. Please specify the method of QC measurement.		
5	Supply of Dry Concentrate powder (consumables): The dry concentrate powder composition should meet the NKF requirements (NKFS-06 & NKFS-07) soluble in nature without contamination.	1) The dry concentrate powder can be supplied in packets with expiry date with legible marking and able to identify different type of concentrates, 2) Alternatively can supply in cartridges, provided in trolley with wheels & break, for the ease of mobility if the items are heavy to move.		
6	Storage of mixed Concentrate: The mixed concentrate must be stored properly without contamination into storage tank to ensure sufficient supply of concentrate for the haemodialysis treatment.	Each solutions should have two storage tanks, each tank with a capacity of 800L to 1000L. NKFS -06 - Two storage tanks with interconnectivity NKFS-07 - Two storage tanks with interconnectivity		

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7	Distribution System: The mixed concentrate should maintain a constant pressure supply through distribution loops to haemodialysis machines. The unused concentrate should have facility to recirculate.	The distribution system should have individual pumps/devices for each concentrate to ensure constant pressure and flow of concentrate to the haemodialysis machines.		
8	Distribution Loop: The mixed concentrate should be able to supply to the haemodialysis machines through high medical grade PEX ring main piping system.	There must be two independent high medical grade PEX distribution piping system for two concentrates. The distribution loop must be equipped with compatible connection to the haemodialysis machines with differentiated identification markings for individual concentrates. If there is multiple options for connecting concentrate to the haemodialysis machines, please provide the details with price.		
9	Safety Standards: The system must be safe to use at Singapore as per relevant regulatory requirements	1) CE Certification. 2) HSA Approval status with category- please provide details		

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10	Additional Information Required.			
a	Water supply Requirements	Please provide details of water pressure and flow rate/hour		
b	Power Supply requirements	Please provide details		
c	Routine Maintenance/ Cleaning procedures	Please provide details		
d	Sampling points	Please clarify is there sampling points provided		
e	Traceability of Alarms and QC data	Is there any features available to trace alarms and QC data ?		
f	Total Processing time / cycle	Please provide details		
g	Years of relevant industry experience	Please provide details of how many years the central delivery system being used in other countries		
h	Customer reference	Please provide details of the customers that the central delivery system used by other institutions/centres in Singapore/ Overseas		
i	Warranty	Warranty- minimum 8 years		
j	Life span of the machine	Please provide life span of the machine		
k	User training and Technical Training	1) User training must be provided for all the users as per request 2) Technical training must be provided for NKF BMEs during the warranty period.		
l	Safe Environmental	After commissioning should be disposed of all packing material.		
l	Service support	Please provide the following details: 1) Service/breakdown calls response time during office hrs (Mon to Sat) 2) Service/breakdown calls response time after office hrs (Mon to Sat) 3) Service/breakdown calls response time on Public holiday/ Sunday.		

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11	Requirement of Central Acid Concentrate Delivery System Capacity				
	DC	MP4KK (NKF Centre) (Retrofit) OP-Apr-25			
	Description				
	Estimated Number of Stations	36			
	Estimated Number of central delivery points	39			
	Estimated number of concentrate	2 (NKFS-06 & NKFS-07)			
	Estimated number of patients using 06 & 07 (1,3,5 shift) [26 stations]	78 / day			
	Estimated number of patients using 06 & 07 (2,4,6 shift) [26 stations]	78 / day			
	Estimated target month to issue Purchase Order	June - July 2024			
	Estimated target month of installation	October - November 2024			
	Layout	Available			