



**STANDARD OPERATING PROCEDURE**

**Department:** Engineering

**TITLE:** Operation of Mixed Bed Unit (Mb)

<b>SOP No.</b>		<b>Revision No.</b>	
<b>Effective Date</b>		<b>Supersedes No.</b>	
<b>Review Date</b>		<b>Page No.</b>	1 of 4

**1.0 OBJECTIVE**

The purpose of this SOP is:

- 1.1 To describe the procedure for operation of Mixed Bed Unit.

**2.0 SCOPE**

- 2.1 This SOP is applicable for standard operation of Mixed Bed Unit (MB) at .....

**3.0 RESPONSIBILITY:**

- 3.1 The Maintenance Operator shall be responsible:

- 3.1.1 Responsible for operation of Mixed Bed Unit.

- 3.2 The Maintenance Engineer shall be responsible:

- 3.2.1 Responsible for assurance of proper working of the plant.

- 3.2.2 Responsible to take corrective action if any deviation observed.

**4.0 ACCOUNTABILITY**

Head –Engineering Services

**5.0 PROCEDURE:**

**5.1 TECHNICAL SPECIFICATIONS**

Make : M/s Aquatech Industries (I) Pvt. Ltd.

Capacity : 8 m<sup>3</sup>/hr

Utility Required: Potable water, Electricity and Regenerants

(Acid - HCl (30 to 33%), Caustic Soda (100% flakes)

Resins : MONO+S100 – Cat ion, MONO+M600 – Anion-mixed bed



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Electricity : 415 Volts 3 phase

**5.2 PRIMARY CHECKS:**

**5.2.1** Ensure that discharge valve of the respective feed water pump is open.

**5.2.2** Diaphragm Valves (V) V1, XV-04, XV-05 of the Mixed Bed unit should open.

**5.3 START UP:**

**5.3.1** Start the plant as per SOP.

**5.3.2** Maintain the feed water pressure in the range 4-5 kg/cm<sup>2</sup> by throttling the feed water pump discharge valve.

**5.3.3** Control the rate of specified flow by throttling the mixed bed outlet valve V2.

**5.4 STOPPING PROCEDURE:**

**5.4.1** Stop the plant as per SOP.

**5.5 FREQUENCY OF REGENERATION:**

**5.5.1** Regenerations of the ion exchange beds to be carried out in every 20 hours as per SOP.

**5.6 TOPPING UP AND REPLACEMENT OF ION EXCHANGE RESINS:**

**5.6.1** Topping up of resin beds are to be carried out once a year and the same to be replaced once in three year .

**5.7 REASON FOR REVISION:**

**5.7.1** Accountability is redefined.



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**6.0 ANNEXURES:**

Annexure -I : Performance log sheet of Mixed Bed Unit.

**7.0 REFERENCES (S)**

Nil

**8.0 GLOSSARY**

SOP : Standard Operating procedure

No : Number

& : And

MB : Mixed Bed



# PHARMA DEVILS

ENGINEERING DEPARTMENT

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### ANNEXURE-I

<b>Date</b>	
<b>Shift</b>	
<b>Operator</b>	

Time (Hrs.)	Inlet Flow in (m <sup>3</sup> /hr)	Conductivity (μs/cm)	UV Lamp Operation (ON/OFF)	UV Hour Meter Reading	Remarks	Operator's Signature
		Mixed Bed				

**NOTE:** Record the following parameters on hourly basis.

### ACCEPTANCE CRITERIA

<b>Conductivity</b>	<b>UV Lamp Operation</b>	<b>Water Flow</b>	<b>Checked by:</b> (Engineer)
<b>Mixed Bed</b>			
NMT 1.3 (μs/cm)	Should be 'ON'	8.0 m <sup>3</sup> /hr	

**NLT:** Not Less Than, **NMT:** Not More Than