



**Title:** Operation of Nitrogen Plant

<b>SOP No.:</b>		<b>Revision No.:</b>	00
<b>Effective Date:</b>		<b>Supersedes No.</b>	Nil
<b>Review Date:</b>		<b>Page No.</b>	1 of 4

**1.0 OBJECTIVE:**

To lay down the procedure for the operation of nitrogen plant.

**2.0 SCOPE:**

This Standard Operating Procedure shall be applicable at formulation plant of .....

**3.0 RESPONSIBILITY:**

**Operator/Technician-Engineering** shall be responsible for attending the minor, major breakdown maintenance work in the plant.

**4.0 ACCOUNTABILITY:**

**Head Engineering:** to provide training to the personnel on this SOP and ensure implementation of this SOP.

**Head Quality Assurance:** to ensure compliance with the SOP.

**5.0 DEFINITIONS:**

NA

**6.0 PROCEDURE:**

**6.1 START UP PROCEDURE**

- 6.1.1 The area near the unit should be kept clean.
- 6.1.2 Check that all electrical system are ok.
- 6.1.3 Check Control panel is getting power supply.
- 6.1.4 Check the zeroing of all instruments.
- 6.1.5 Ensure that drain valves of all equipments are closed.
- 6.1.6 Switch ON the main switch and control supply switch.
- 6.1.7 log in Id and password
- 6.1.8 Open the air line valve and ensure that the air pressure is mentioned in drawing.
- 6.1.9 Observe the operation of the unit for some time and see that the PSA module is working properly.



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6.1.10 Check the minimum pressure in the adsorbing tower goes to  $6.0 \text{ kg/cm}^2$  and if required, control that air flow by the globe valve V9 provided just at the air inlet into the PSA module Setting should be disturbed only after watching the result for 5-10 minutes.

6.1.11 After the minimum pressure in the Surge tank has reached up to  $5.5 \text{ kg/cm}^2$ , The gas should be vented through rot meter for 10 -15 minutes ,Check the oxygen content in the gas if it is within limits, close the vent valve automatically.

6.1.12 After that checked flow rate of nitrogen less than  $25 \text{ m}^3/\text{hr}$  in flow meter.

## **6.2 SHUT DOWN PROCEDURE**

6.2.1 Switch OFF the control supply switch and main switch . Don't disturb the setting off globe valve. Stop the air supply valve .

## **6.3 POINT FOR TROUBLE FREE OPERATION OF THE UNIT**

6.3.1 Regular maintenance of your compressor installed in the plant should be done as per their operating manual.

6.3.2 Check drain trap provided with cooler and air air receivers are working well and there is no water carry over. For this after every 3-4 hours manual drain valves should be opened to drain out the moisture, if any.

6.3.3 Check and ensure that all valves of PSA module are opening/closing properly and minimum pressure in both absorbers goes to  $6.0 \text{ kg/cm}^2$  and time sequence is all right.

6.3.4 Check and ensure the changeover of towers and all valves working according to the time cycle.

6.3.5 Check periodically setting of pressure switches and working of the other instrument.

6.3.6 A log book should be maintained in which all operating conditions should be recorded after regular intervals of 2 hours.

6.3.7 Check that air filter fitted in the plant is working OK and it should be cleaned properly.



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### 7.0 ABBREVIATIONS:

SOP	Standard Operating Procedure
QA	Quality Assurance
No.	Number
Pvt.	Private
EN	Engineering

### 8.0 ANNEXURES:

ANNEXURE No.	TITLE OF ANNEXURE	FORMAT No.
Annexure-I	Nitrogen Plant Log Book	

### 9.0 DISTRIBUTION:

- Master Copy                      Quality Assurance Department
- Controlled Copy No. 01      Quality Assurance Department
- Controlled Copy No. 02      Engineering Department
- Controlled Copy No. 03      Quality Control Department
- Controlled Copy No. 04      Production Department

### 10.0 REFERENCES:

In house

### 11.0 REVISION HISTORY

Revision No.	Change Control No.	Details of Changes	Reason of Changes	Effective Date	Done By
00	Not applicable	Not applicable	New SOP		

