

CHECKING RX TUBE FOR IMPURITIES
RXSOP

CONFIDENTIAL:
Subject to Protective Order
of 14th Judicial District Court
No. 91-1145
rev. 7/91

STANDARD OPERATING PROCEDURE

REACTORS' AREA
TAKING A REACTOR TUBE OFF LINE FOR IMPURITY CHECK

CHECK	ACTION STEPS (All Caps)	COMMENTS (Below steps)
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This SOP is to be used whenever a reactor tube is to be taken off line temporarily to check the product quality being produced by that individual tube. This applies to checking for PCB's, C4's or other product impurities that are at the unacceptable range in the particular reactor's crude. The usual time this check takes is approximately fifteen minutes. At times, depending on the conditions of the reactor, the time available is less and we must use the temperature as the deciding factor. We must return this tube back in service before the temperature reaches 600 °F. This is the required startup temperature.

- _____ 1. CATCH A SAMPLE OF THE REACTOR CRUDE.

This is the base line for our test.

- _____ 2. VERIFY THAT THE NITROGEN TUBING TO THE INDIVIDUALS (ORGANIC AND OXYGEN) ARE CLEAR AND THAT THE PRESSURE GUAGES RESPONDS TO THE NITROGEN CHECK.

Do not block organic or oxygen feed to the tube until all identified deficiencies are corrected.

- _____ 3. PUT INDIVIDUAL NITROGEN FLOW TO THE OXYGEN FEED OF THAT TUBE UNTIL THE ROTAMETER "BOB" FALLS DOWN INDICATING THAT THERE IS NO OXYGEN FLOW. IT IS NOT NECESSARY TO ISOLATE THE OXYGEN BLOCK VALVE. THE PRESSURE GUAGE ON THE OXYGEN SHOULD READ SLIGHTLY ABOVE WHAT THE INITIAL READING WAS.

Once the oxygen feed has been fully replaced with individual nitrogen, the tube is out of service for testing purposes.

The organics feed should remain open. Much of the poor catalyst fluidization and tube loss can be attributed to plugging in the mixed feed piping and head area so leaving the organics open eliminates taking the chance of causing plugging to develop.

- _____ 4. CATCH A SECOND SAMPLE OF THE REACTOR CRUDE 15 - 20 MINUTES AFTER STEP 3 IS COMPLETED OR WHEN THE TUBE

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TEMPERATURE OF THE TUBE TAKEN OUT OF SERVICE GETS DOWN TO 620 F. IDENTIFY THE SAMPLE WITH THE TUBE TAKEN OUT FOR CHECK.

The idea here is to give the degasser enough time to turn over so that the second sample is representative of the reactor product with the tube out of service. However, you should also be putting the tube back in service by the time it gets to 600 °F. as this is the startup temperature deemed necessary for reaction to take place.

5. PUT THE TUBE BACK IN SERVICE BY CLOSING THE VALVE ON THE INDIVIDUAL NITROGEN TO THAT TUBE.

Make sure the tube response is not irregular at any time and watch for any increasing dome temperatures indicating oxygen breakthrough.

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