

Roaring Spring.

Compositions

Name

EXIMER LOG

School

EMG 101 MSC

Grade

11/95

9 3/4 in. x 7 1/2 in. 100 Leaves

Roaring Spring • Roaring Spring, PA 16873



0 70972 77230 4

FILLING PROCEDURE: 1) EVACUATE EXCIMER TANK

2) IF GAS LINES ARE CONTAMINATED, EVACUATE LINES BY PRESSING SOLENOID VALVE WHILE VACUUM PUMP IS ON. FLOW RIDES w/ He a few times => EVACUATE

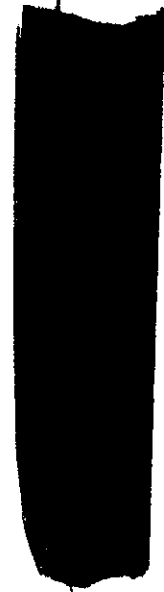
3) ADD ~~80 mbar~~ 100 Mbar ~~He~~ Xe

2) 80 Mbar HCL MIX

3) 2420 Neom

2600 mbar total.

9 3/4 in. x 7 1/2 in.



11/8/95

- ① Veen lead is correct to power supply
- ② The cable to vacuum pump was loose but was fixed.
- ③ The buffer gas line and regulators are checked thoroughly for three times

④ Refill gas chamber with He to 2600 mbar to test the seal. @

⑤ The vent control 'departing device' is still missing.

⑥ Water line is not grounded yet

⑦ The halogen filter has been replaced.

⑧ Pressure reading is 2540 mbar @ 9:00am this morning. That may suggest a leak of 60 mbar in 16 hrs. Let's fix it until 5:00pm today to check if the pressure continues to drop to 2510 mbar.

11/9/95

- ① Xide window of the vacuum pump has condensation which might be water drops.
- ② The oil level looks too low and also dirty. The oil has to be changed soon.
- ③ $P = 2.530 \text{ mbar}$ @ 4:34 pm \Rightarrow The system might not be leaking. It needs to be observed over night.

11/10/95

- ① $P = 2.500 \text{ mbar}$ @ 8:50 am.
- \Rightarrow Leak rate $\approx 50 \text{ mbar per day}$.
- ② Drain the vacuum pump oil. The oil looks extremely dirty (looks greenish actually).
- ③ Flush the pump twice with fresh oil.
- ④ Refill the pump with fresh oil to $3/4$ of the height on the window.
- ⑤ Fill the gas chamber with He to 2.600 mbar @ 10:00 am. Wait and see for the weekend.

~~11/9~~ 11/10/95

⑥ $P = 2.600 \text{ mbar}$ still !! @ 4:16 pm.

11/13/95

① $P = 2.560 \text{ mbar}$ @ 8:55 am.

The leak rate is estimated $\approx 10 \text{ mbar/day}$.

11/14/95

① $P = 2.525 \text{ mbar}$ @ 8:40 am.

11/16/95

① $P = 2.495 \text{ mbar}$ @ 10:13 am.

11/20/95

① $P = 2.400 \text{ mbar}$ @ 11:56 am.

② The leak rate is estimate 20 mbar/day .

according to the past 10 days' observation.

12/08/95

① $P = 2.280 \text{ mbar}$ @ 9:07 am.

Leak rate $\approx 20 \text{ mbar/day}$.

12/08/95 ③ Xenon values for buffer & Noble gases have been replaced.

③ Refilled gas chamber with He to 2600 mbar, @ 10:31am.

④ Connected the noble gas & Halogen gas lines

gas lines

② Flushed them for three times

⑤ Refilled the lens with He to 2700 mbar (mistake) to ~~test~~ check

leakage @ 3:35pm

① Regulator reading

gas	primary	secondary
HCl	650 psi	44 psi
He	2,300 psi	39 psi
Xe	300 psi	46 psi
Ne	300 psi	52 psi

③ The HCl Regulator leaked muted & ~~was~~ sticky.

12/11/95

① $P = 2600$ mbar in chamber \Rightarrow leaking
 ② HCl has pure pressure 300 psi

\Rightarrow leaking secondary pressure 92 psi

③ Xe 150 psi primary, 210 psi secondary

④ He 1,200 psi primary, 420 psi secondary

@ 8:50am.

⑤ Take of the two valves installed last week

and inspect for leakage,

⑦ Both valve assemblies have been cleaned and re-installed.

① Refill the lens with He to 2600 mbar @ 9:00pm. The room feels warm.

12/12/95

① $P = 2580$ mbar @ 3:00pm

② Flammability: 200 mbar HCl + He mixture in ~~1,300~~ 1,300 mbar He. @ 4:34pm. ($P_T = 1,500$ mbar)

12/13/95

- ① No leak has been found over night.
- ② No unusual abnormal symptoms was observed.

③ Refill 200 mbar HCl + He mixture in 1.300 mbar He @ 8:47am. # of fills ↓

④ Change of Argon filter 2/125 life # ↓

⑤ Refill chamber with 100 mbar HCl + He mixture in 2,500. mbar He.

⑥ Pumping has not been quite finished yet. Continue tomorrow.

⑦ Argon filter 4/125

⑧ Pumping looks finished.

⑨ Needle value is set to 92/min @ 38psi intake pressure. 92/min is

me than enough for 20Hz operation.

⑩ P = ~~2585.25~~ 2585. psi @ 2:30pm

12/14/95

① Refill the laser with 100 mbar HCl + He in ~~2400~~ 2500. mbar He.

② Run the laser @ 20.5 KV & 20Hz from 2:33pm.

③ Refill the laser with laser gas
 ④ Power = ~~271~~ 276 mW @ 20Hz & 20.5KV @ 3:35pm
 Power = ~~271~~ 274 mW @ 20Hz & 20.5KV

⑤ 3.17 mW = 1 mJ ⇒ Power = 188 mJ @ 20Hz
 Power = 197 mJ @ 20Hz

⑥ Laser being running for 1 hr.

Power = 556 mW (175 mJ) @ 20Hz & 20.5KV
 Power = 526 mW (166 mJ) @ 20Hz & 20.5KV

Pressure = 2620 mbar in chamber

⑦ Shut-down @ 4:41pm

⑧ P = 2680 mbar @ 4:57pm

12/15/95

① P = 2600 mbar @ 8:22 am.

② Shut-off the gas supply.

③ P = 596 mT @ 20 Hz & 20.5 kV

④ P = 614 mT @ 20 Hz & 20.5 kV

⑤ Shut down @ 8:36 am.

⑥ Halogen fill - usage = 6/125

⑦ The broken 752 power resistor has been replaced.

⑧ P = 582 mT @ 20 Hz & 20.5 kV @ 4:04 PM

⑨ P = 608 mT @ 20 Hz & 20.5 kV

⑩ Run for about an hour to test stability

⑪ P = 560 mT @ 20 Hz & 20.5 kV @ 4:50 PM

⑫ Pressure = 2600 mbar still.

12/18/95

① P = 2595 mbar

② P = 582 mT @ 20 Hz & 20.5 kV

③ P = 2585 mbar

④ P = 582 mT @ 20 Hz & 20.5 kV

⑤ There is significant noise from base head. It sounds like bad bearing in the gas circulator. However, the noise went away after the circulator is running for 5 mins.

12/22/95

① P = 2590 mbar cold

② P = 608 mT @ 20 Hz & 20.5 kV

③ P = 2580 mbar cold

④ P = 618 mT @ 20 Hz & 20.5 kV

12/22/95

① P = 2580 mbar cold

② P = 594 mT @ 20 Hz & 20.5 kV

③ P = 558 mT @ 20 Hz & 20.5 kV

P = 2600 mbar warm.

8:45 am

11:03 am

12/29/75

① P = 2500 mbar @ 11:30 am

Leak rate = 100 mbar/15 days

≈ 6 mbar/day

② Power = 502 mW @ 20 Hz × 20.5 KV

↑
164 MJ/pulse

1/9/76

① P = 2,430 mbar @ 4:00 pm

③ Leak rate = 170 mbar/26 days ≈ 6.5 mbar/day

1/31/76

① P = 2,310 mbar @ 9:40 am

③ Leak rate = 190 mbar/32 days

3/17/76

① Pump out the gas inside
② Back fill chamber with 1500 mbar He.

3/10/78

① Pressure is found dropped to 900 mbar

steps!

② pump it down

③ flush gas line X regulator & lines

④ Back fill with Ne to 1500 mbar

⑤ Pressure has dropped to 1,100 mbar

⑥ evacuate the gas chamber and

refill it with Ne to 1,500 mbar

3/14/00

Impactor of groups both are

reading just below 1000 when

(the beam on 910) The last

thing seen did used to fall

to 1500 mbar. This should be

the first fall

Impactor of gases. Ne (blue)

to still counted. The He is also

counted. The Xe (yellow) is

not