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Week 10

1. Phase I

COMPLETE
Produced solid CO2 using Coldfinger method. Block was clear and crystalline in structure when the solid was crushed, it formed shards of CO2.

Produced solid electronics grade NH3 using Coldfinger method. The NH3 was clear while in the cryostat but when the slug made contact with LN2 it turned white. Possibly due to the fracturing of the solid from thermal shock The material was hard as a block of ice.

2. Phase II

In Progress
Using scale with precision of 0.001g and measuring the volume is in development The goal is to measure the density from within the bottle using the equation

$$\rho = \frac{(m_f - m_i - m_b)}{(V_f - V_i - V_b)} + \frac{d\rho_{LN2}}{dt}t \tag{1}$$

where m_f, V_f = final mass, volume m_i, V_i = initial mass, volume $\frac{d\rho_{LN2}}{dt}$ is the rate at which LN2 evaporates at 293K t is the time the measurement was conducted