

# NASA TECH BRIEF



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## Cold Trap Increases Sensitivity of Gas Chromatograph

### The problem:

To determine trace amounts (as low as 0.1 ppm) of oxygen and argon in helium by gas chromatography.

### The solution:

Use a cold trap to concentrate the oxygen and argon before these impurities are introduced into the chromatograph.

### How it's done:

A definite volume of the impure helium gas to be analyzed is passed into a trap which is cooled on the outside by liquid nitrogen to condense the oxygen and argon. The released (uncondensed) helium gas is valved to a meter and discharged from the system. After the measured volume of helium has passed, the trap is heated to vaporize the oxygen and argon and allow the resultant gases to pass into the chromatograph for analysis in the conventional manner.

### Note:

Inquiries concerning this invention may be directed to:

Technology Utilization Officer  
Marshall Space Flight Center  
Huntsville, Alabama 35812  
Reference: B66-10517

### Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

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