

Joule-Thomson effect 3.2.06.00

What you can learn about ...

- Real gas
- Intrinsic energy
- Gay-Lussac theory
- Throttling
- Van der Waals equation
- Van der Waals force
- Inverse Joule-Thomson effect
- Inversion temperature

Principle:

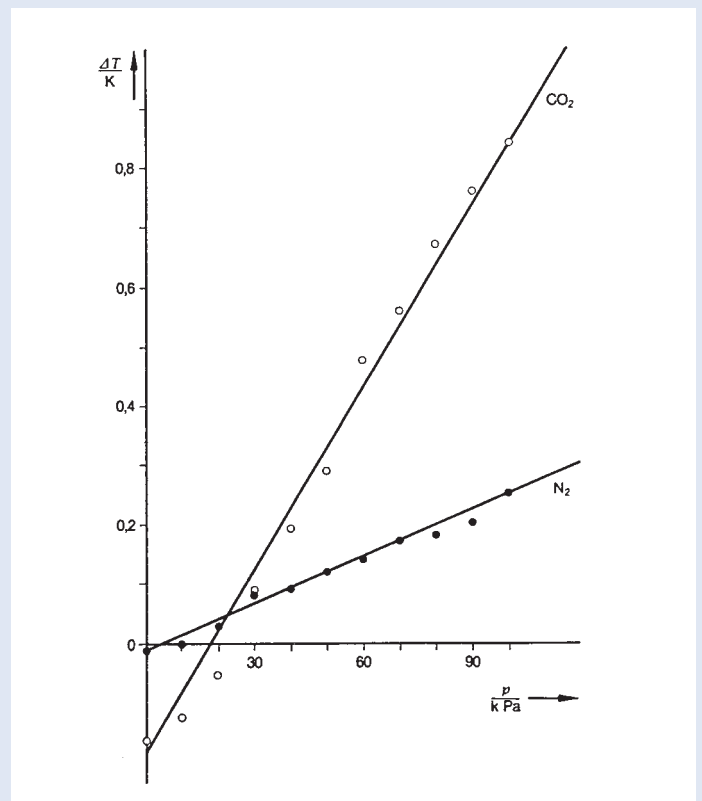
A stream of gas is fed to a throttling point, where the gas (CO_2 or N_2) undergoes adiabatic expansion. The differences in temperature established between the two sides of the throttle point are measured at various pressures and the Joule-Thomson coefficients of the gases in question are calculated.



What you need:

Joule-Thomson apparatus	04361.00	1
Temperature meter digital, 4-2	13617.93	1
Temperature probe, Pt100	11759.01	2
Pressure-reducing valves, CO_2 / He	33481.00	1
Pressure-reducing valves, nitrogen	33483.00	1
Wrench for steel cylinders	40322.00	1
Steel cylinders, nitrogen, 10 l	41763.00	1
Gas-cylinder Trolley for 2 Cylinder	41790.20	1
Hose clip for 12-20 diameter tube	40995.00	2
Rubber tubing, vacuum, i.d. = 8 mm	39288.00	2

Complete Equipment Set, Manual on CD-ROM included
 Joule-Thomson effect P2320600



Temperature differences measured at various ram pressures.

Tasks:

1. Determination of the Joule-Thomson coefficient of CO_2 .
2. Determination of the Joule-Thomson coefficient of N_2 .