

Boiling point diagram of a binary mixture

Article no: P3030401



Principle

A boiling point diagram shows the boiling points of a binary mixture as a function of the vapour / liquid equilibrium of the mixture at constant pressure. The boiling points of various mixtures of methanol and chloroform are measured and the composition of the liquid phases are determined using refractometry and a calibration curve.

Benefits

- Important basic experiment for distillation
- Excellent for the introduction of refractometry

Tasks

1. Determine the refractive indices of the pure components and about 10 different mixtures of known composition.
2. Plot the boiling point diagram of the binary mixtures of methanol and chloroform.

Learning objectives

- Fundamentals of distillation
- Equilibrium diagram
- Chemical potential
- Activity coefficient
- Raoult's law

Additional necessary

- Chloroform

Scope of delivery

Retort stand, h = 750 mm	37694-00	2
Universal clamp	37715-01	2

Right angle boss-head clamp	37697-00	2
Burette clamp, roller mount., 2 pl.	37720-00	1
Immersion thermostat Alpha A, 230 V	08493-93	1
External circulation set for thermostat Alpha A	08493-02	1
Bath for thermostat, makrolon	08487-02	1
Abbe refractometer	35912-00	1
Temperature meter digital, 4-2	13618-00	1
Sheath Thermocouple, NiCr-Ni, Type K, -40°C ... +1000°C	13615-06	1
Heating mantle f. roundbottom flask, 250ml	49542-93	1
Clamp for heating mantle	49557-01	1
Power regulator	32288-93	1
Round bottom flask, 250 ml, 2-neck, IGJ 19/26	35843-05	2
Dimroth condenser	MAU-26525500	1
Column head, with stopcock, ST 19/26	35919-01	1
Stopper, IGJ 19/26,glass,clear	41252-10	1
Clamp f.ground joint,plastic,NS19	43614-00	3
Teflon sleeve IGJ 19, 10 pcs	43616-00	1
Protective sleeves f.temp.probe,2	11762-05	1
Rubber hose	39282-00	5
Burette, lateral stopcock, Schellbach, 50 ml	MAU-24022024	2
Erlenmeyer flask, Boro, narrow neck	46141-00	11
Rubber stopper, without hole	39256-00	11
Beaker, Boro, high-form	46026-00	2
Pasteur pipettes, 250 pcs	36590-00	1
Rubber caps, 10 pcs	39275-03	1
Funnel, glass, top dia. 50 mm	34457-00	3
Boiling beads, 200 g	36937-20	1
Water jet pump, plastic	02728-00	1
Laboratory pen, waterproof, black	38711-00	1

Methanol 500 ml	30142-50	1
Glycerol, 250 ml	30084-25	1
Hose clamp for 8-12 mm diameter	41000-00	14
Rubber hose	39290-00	1
Tubing connector, ID 6-10mm	47516-01	2
Universal power supply, 600mA 3/4.5/5/6/7.5/9/12V, incl. 9 adaptors	11078-99	1