

LABORATORY EQUIPMENT

## Acid purification

The purest acids always  
to hand

**distillacid**



BERGHOF

**Modern analytic laboratories** need to conduct high-quality ultratrace analysis while at the same time keeping the cost of chemicals and consumables to a minimum. The Berghof sub-boiling apparatus is an assurance of quality: users benefit from acids that are guaranteed pure at very low operating costs.

---

### 1. High purity constructing materials

To minimize corrosion risk and to guarantee high quality of purified acids the corrosion risk has to be minimized. Therefore, the only materials used are plastics (PP, TFM™-PTFE, PTFE, PFA), ensuring that the possibility of corrosion is completely excluded even during long term operation. The distillate comes into contact solely with ultrapure PFA.

---

### 2. Sub-boiling principle

The sub-boiling apparatus is used for the production of high-purity acids for ultratrace analysis. Heating is carried out contact-free with an infrared lamp whose output is adjusted so that without additional temperature regulation for HF, HNO<sub>3</sub>, HCl

or H<sub>2</sub>O a maximum temperature of around 10°C-20°C under the boiling point of the acid is achieved. This results in an equilibrium between the absorbed infrared radiation and the heat of vaporisation of the liquid. The mild heating prevents the production of droplets and thus the conveyance of impurities. All low boiling substances, especially salts, remain in the residue. Users benefit from the high degree of purification.

---

### 3. Cost effectiveness

The equipment is quickly amortised due to the use of reasonably priced commercially available acids of a quality suitable for analysis (p.a.).

---

### 4. Fields of application

All low boiling acids are suitable for distillation. It is also possible to produce high purity water very easily.

- HNO<sub>3</sub>
- HCl
- HF
- H<sub>2</sub>O

---

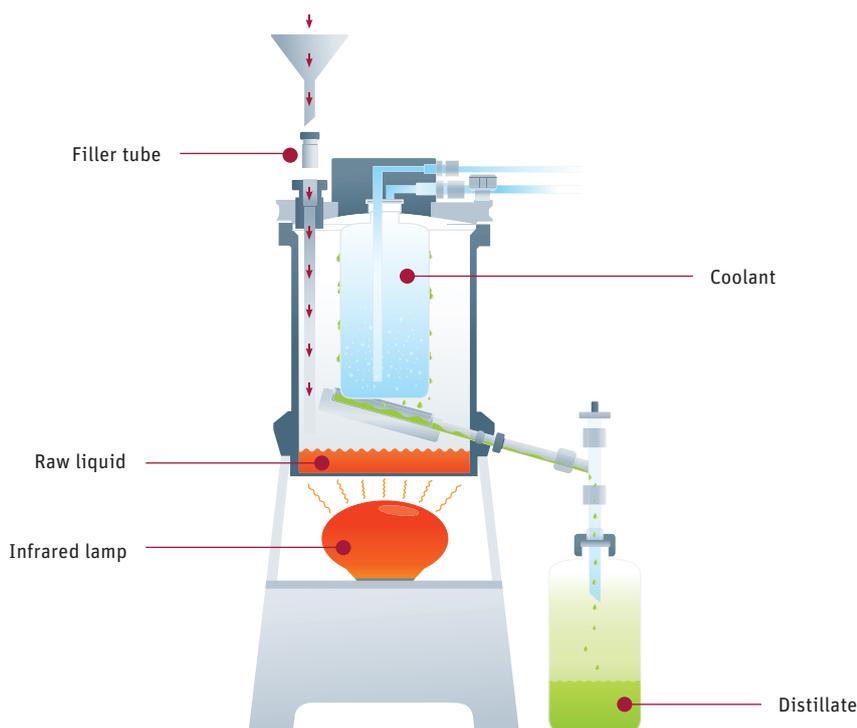
### 5. Distillation quantities

Within 24 hours the following distillation quantities can be obtained:

- HNO<sub>3</sub> 1.2 L
- HCl 1.1 L
- HF 1.0 L
- H<sub>2</sub>O 1.8 L

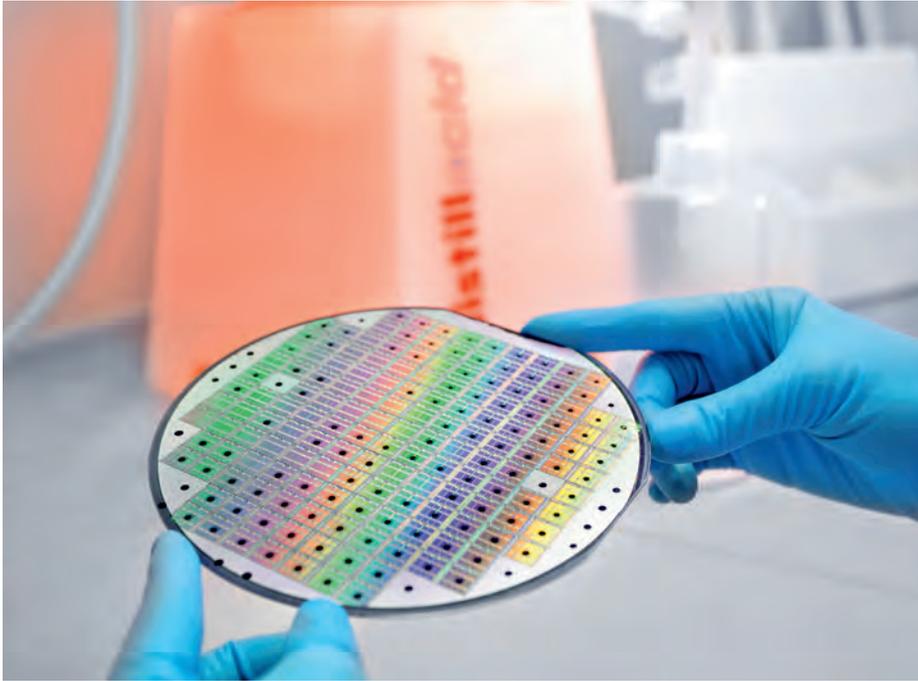
---

### Sub-boiling principle



# Distillacid

## Degrees of purity



### Durable constructing materials

Only isostatically pressed TFM™-PTFE, PTFE, PFA and polypropylene are used as constructing materials. Even where highly aggressive acids such as HF are used a long service life is achieved.

### Purity - with HF as an example

Since the substances to be purified only come into contact PFA Distillacid is particularly suitable for the purification of HF. The risk of contamination is very low. The indicated degrees of purity of HF for analysis were measured after purification with the BSB-939-IR sub-boiling apparatus.

Concentrations in ng/g (=ppb)	
Ag	< 0.05
Al	0.2
As	< 0.05
Au	< 0.05
Ba	< 0.05
Be	< 0.1
Bi	< 0.05
Ca	0.1
Cd	< 0.05
Co	< 0.05
Cr	< 0.05
Cu	< 0.05
Fe	0.25
Ga	< 0.05
Ge	0.4

Concentrations in ng/g (=ppb)	
In	< 0.05
K	0.6
Li	< 0.05
Mg	0.08
Mn	< 0.05
Mo	< 0.05
Na	0.6
Ni	0.3
Pb	< 0.05
Sb	< 0.05
Sn	< 0.05
Sr	< 0.05
Ti	< 0.1
V	< 0.05
Zn	< 0.05

# Distillacid

## Technical specifications



distillacid	
<b>Voltage</b>	230 V
<b>Frequency</b>	50 / 60 Hz
<b>Power consumption</b>	250 W
<b>Weight</b>	7 kg (without vessel)
<b>Materials</b>	TFM™-PTFE / PTFE / PFA / PP
<b>Operating temperature</b>	10°C – 20°C below the boiling point of the used acid
<b>Max. operating temperature</b>	150°C
<b>Cooling water</b>	0.3 liter/min
<b>Max. recommended cooling water temperature</b>	15°C

### Berghof Products + Instruments GmbH

Eningen Site | Harretstrasse 1 | 72800 Eningen | Germany | T +49.7121.894-0 | [laboratorytechnology@berghof.com](mailto:laboratorytechnology@berghof.com) | [www.berghof.com](http://www.berghof.com)

53-0215-85-01-01-001, All rights are reserved; subject to changes and errors, Printed in Germany