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DUISBURG
ESSEN

Open-Minded

using fume hoods

using fume hoods → contents

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- protection
- structure
- operating
- special fume hoods
- 10 rules

using fume hoods → protection

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harmful explosive
toxic odour-
intensive acid vapor
volatile dusting powders
eluents CMR carcinogenicity, mutagenicity and reproductive toxicity

Bilderzwerg-Fotolia.com

working with unknown substances .....

fume hoods

- reduce harmful gas, vapours, suspended particles in breathing air
- prevent formation of potentially explosive atmospheres
- reduce injuries or damages by hazardous splashes and shattered glass

using fume hoods → structure

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- chemically and temperature highly resistant worksurface
- movable, splitted and shock resistant front sashes
- connected to a central exhaust air device system
- optimised flow conditions
- EU standard, annual control
- daily control before using

using fume hoods → structure

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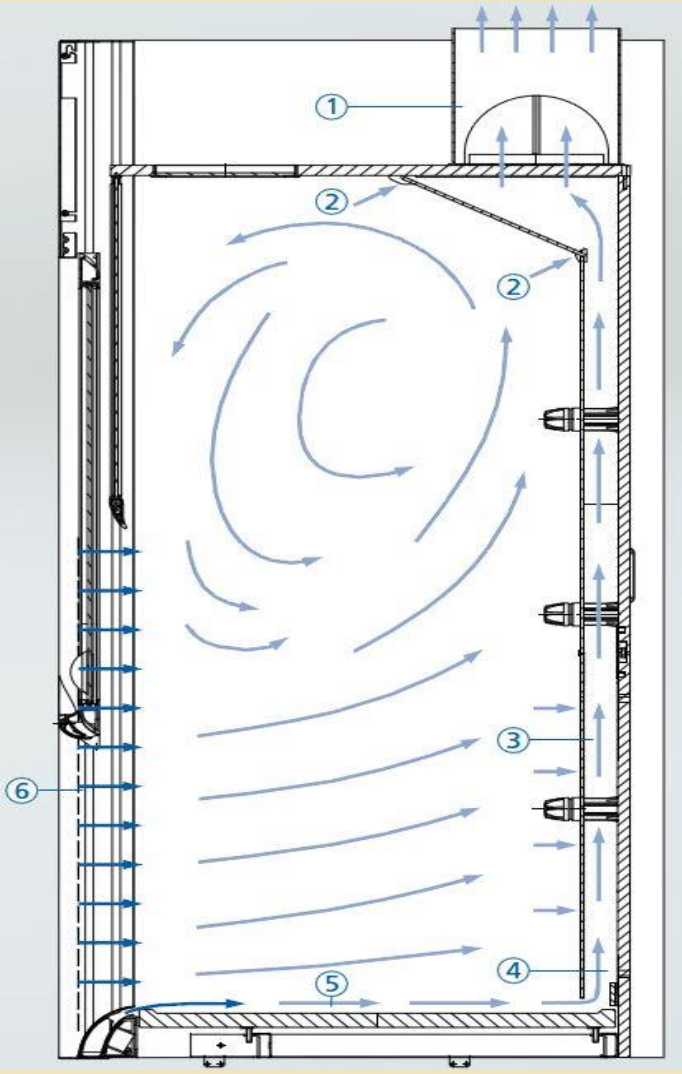
Ventilation

- **air cylinder**
- **flow path**
- **harmful substances rest in the flow about 3 - 5 min**
- **contaminated air can leak out of open sashes**

① Extract manifold
② Inclined extract fume cupboard top panel
③ Extract service panels in baffle
④ Baffle
⑤ Supportive flow technology over entire width of worktop
⑥ Supportive flow technology along both side posts



Waldner-Werbeprospekt für Scala Abzug

using fume hoods → structure →operating instructions

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light

horn

maximal air flow

minimal air flow

control

stop button

stop button

using fume hood → operating instructions

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Never put your head in a fume cupboard!

using fume hoods → operating instructions →air dynamics

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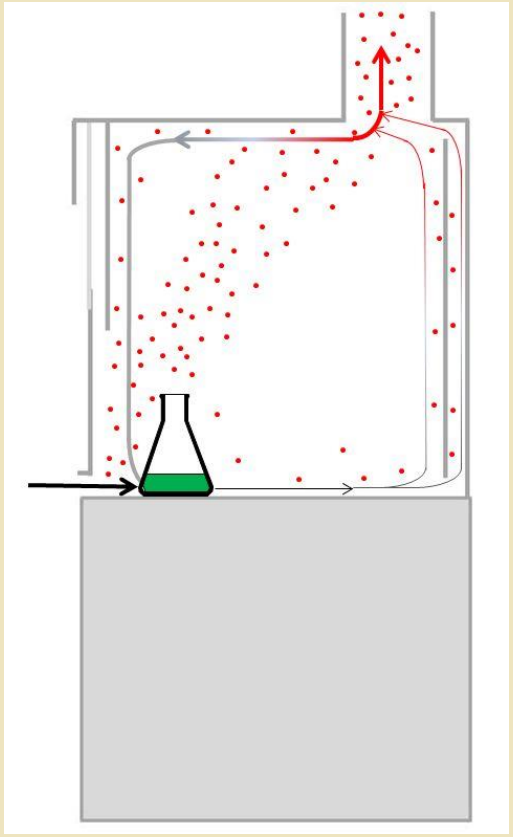
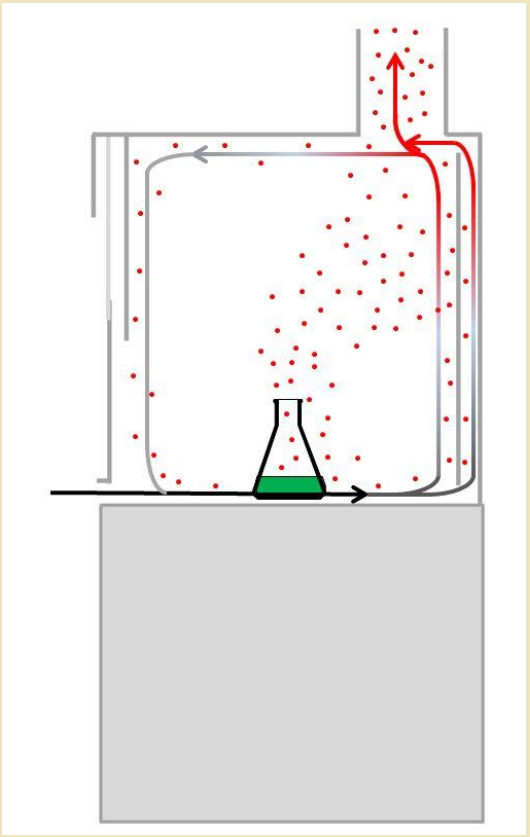


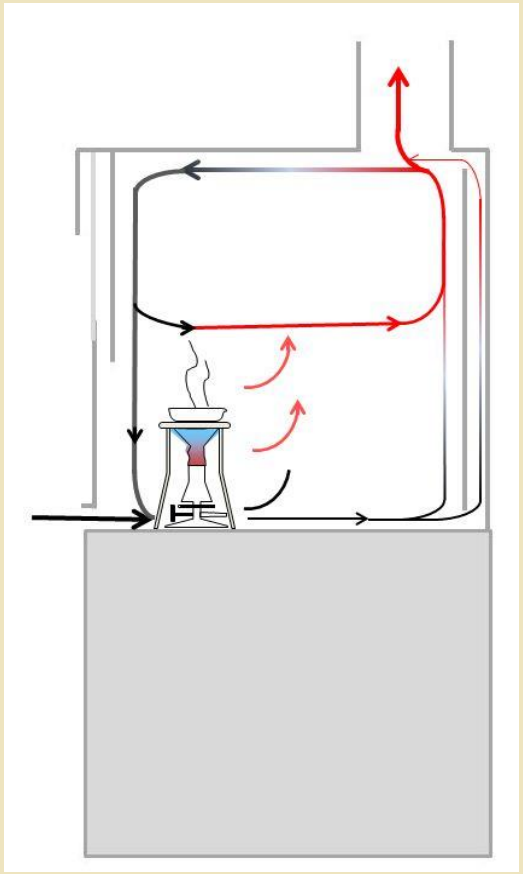
Keep the first

15 cm

of the work surface free!

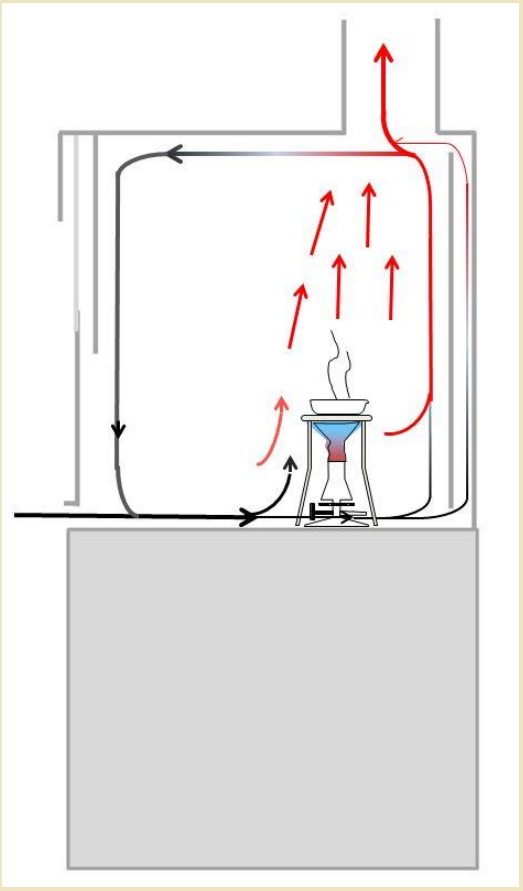


using fume hoods → operating instructions → air dynamics



Set-up heating apparatuses at the back of the fume hood!

Close the sash!



using fume hoods → operating instructions → air dynamics

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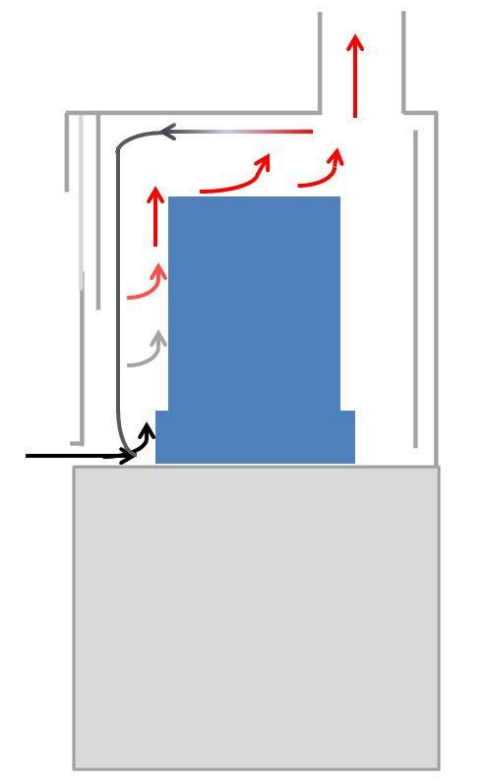
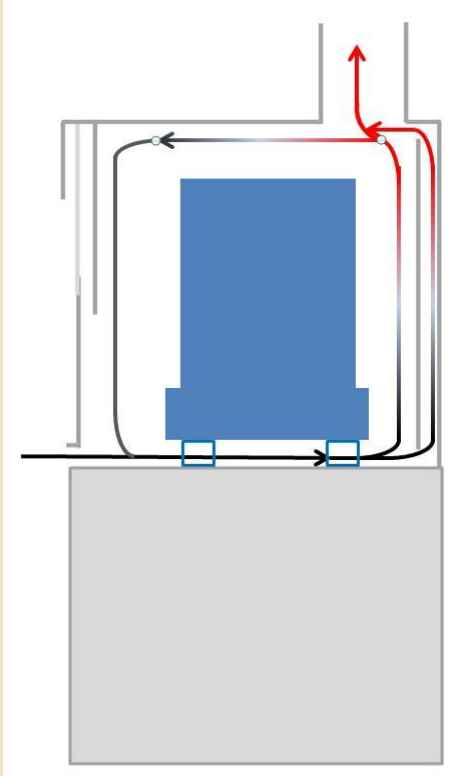


Do not …

- **overload the fume cupboard!**
- **store chemicals inside!**

Place bulky objects, equipment, thermosstats etc. on bricks!



using fume hoods →operating instructions →air dynamics

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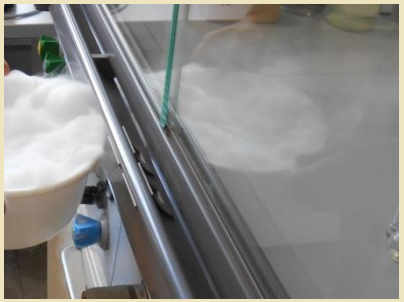
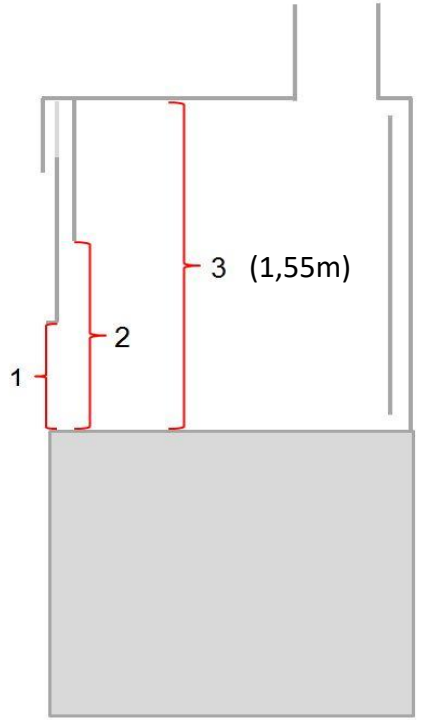


opening sash up to …
50 cm → volume flow increases automatically up to 300 m³/h.
90 cm →volume flow remains unchanged at 300 m³/h



sash window	closed	50 cm open (1)	90 cm open (2)
air exchange / hour	167	251	251
air volume / opening area (m³/cm²)	0,4	0,06	0,034
air velocity [m/s]	1,111	0,167	0,093

calculated for Secuflow mc6 by Dr. Monika Seifert

using fume hood → operating instructions and cleaning

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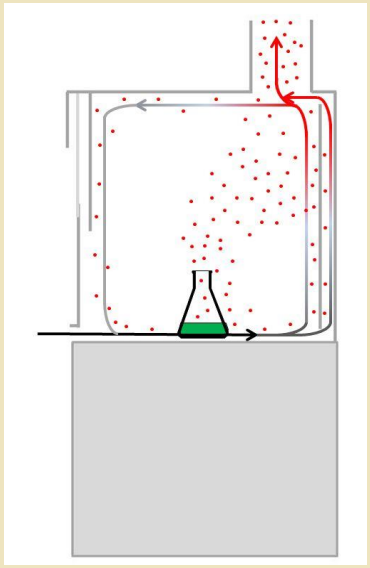

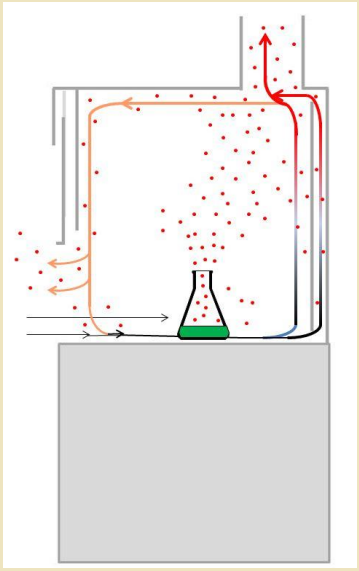

- no storage
- use electricity outside
- use short wires
- night and weekend operation
  reduction of the half volume flow
- no open acid extraction
- avoid any suddenly movement in
  and in front of open fume hoods
- don‘t pass directly open fume hoods
- for cleaning use soft moisty towels,
  no organic chemicals neither acids or bases

using fume hoods →operating instructions

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whenever possible:

- **keep the front sash closed**
- **use sliding windows**
- **close sliding windows**

special fume hoods

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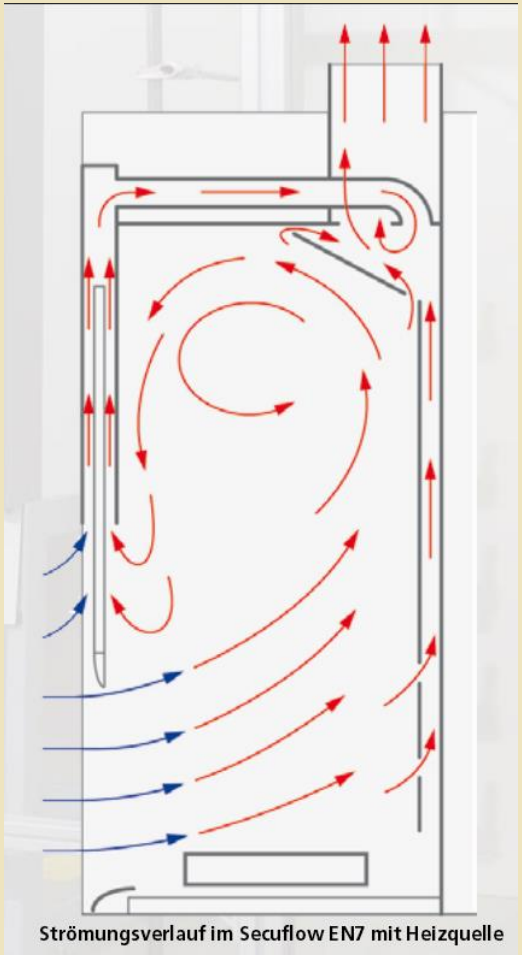
both located in B57

a) Use special acid fume hood when
working with → hydrofluoric acid
→ perchloric acid

b) Use fume hood for high thermal loads
(4 KW per meter width) when working with
→ radioactive substances
→ microorganisms,
→ CMR-substances
and for acid extraction operations.



Strömungsverlauf im Secuflow EN7 mit Heizquelle

using fume hood → conclution → 10 rules

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- Consider the air flow path (air roll).
- Close all front windows.
- Avoid sudden movements.
- Avoid passing open fume hoods.
- Place heat sources at the back.
- Avoid overload.
- Place bulky objects on bricks.
- Keep the first 15 cm free.
- Do not store chemicals inside.
- Keep your head outside.
- Place bulky objects, equipment, thermosstats etc. on bricks!