

Inhibitors and their harmful concentrations for the biological activity in the fermenter

<u>Inhibitor</u>	<u>Concentration</u>
Natrium (Sodium)	between 6 – 30 g/l (in adapted cultures up to 60 g/l)
Potassium	from 3 g/l
Calcium	from 2.8 g/l CaCl ₂
Magnesium	from 2.4 g/l MgCl ₂
Ammonium	2.7 – 10 g/l
Ammonia	from 0.15 g/l
Sulfur	from 50 mg/l H ₂ S, 100 mg/l S ²⁻ , 160 mg/l Na ₂ S (in adapted cultures up to 600 mg/l Na ₂ S and 1,000 mg/l H ₂ S)
Heavy metals	<u>as free ions:</u> Ni from 10 mg/l .. Cu from 40 mg/l .. Cr from 130 mg/l, Pb from 340 mg/l .. Zn from 400 mg/l <u>in form of carbonate:</u> Zn from 160 mg/l .. Cu from 170 mg/l .. Cd from 180 mg/l, Cr ³⁺ from 530 mg/l .. Fe from 1,750 mg/l Heavy metals could be neutralized or precipitated by sulfide
Branched fatty acids:	ISO-butyric acid: already from 50 mg/l inhibiting
AOX	>10,000 mg/kg halogenated hydrocarbon compounds, <i>like</i> Cl, Fl, Br, Jd, e.g. disinfections and disinfection- and cleaning agents
Electric conductivity	>25,000 µS
pH-Value	the range of less than 6.8 more than 8.0 is critical

Sources: - Handreichung Biogasgewinnung und –nutzung, FNR
 - TU Muenchen-Weihenstephan
 - Experience of INNOVAS

INNOVAS Innovative Energie- und Umwelttechnik

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