



DS6 SORBENT DATA SHEET AND CHARACTERISTICS

3/11/2022

KEY DIFFERENTIATORS

A carbon-negative, non-toxic, humidity swing sorbent with very fast cycling times

INGREDIENTS

Biochar
Plant-based dietary supplement (food-grade)
Gelatin (food-grade)
Vegetable glycerin (food-grade)

MANUFACTURING DETAILS

Manufacturing energy: 2 watts per tile
Manufacturing conditions: 30 seconds of 1000 watts microwave energy to make 4 tiles
Manufacturing cost: \$0.12 per tile
Average tile size: 5 cm x 5 cm (~2 in x 2 in)
Average tile weight: 4.90 g

CO₂ ABSORPTION

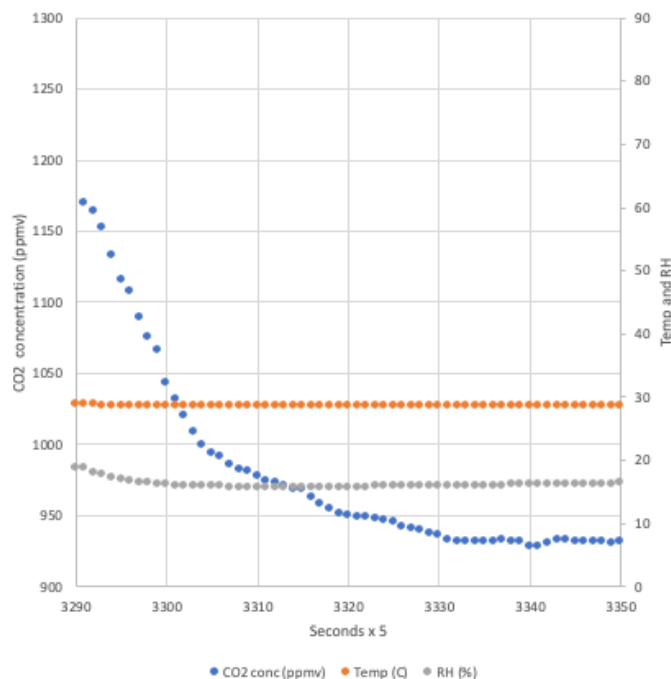
Absorption time: 250 sec

Concentration decrease: 236 ppmv

Absorption rate: 0.944 ppmv/sec

Desorption humidity range: < ~17%
RH @ 28 C

Desorption energy consumption: 0
watts (passive absorption)





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CO₂ DESORPTION

Desorption time: 300 sec

Concentration increase:
259 ppmv

Desorption rate: 0.863
ppmv/sec

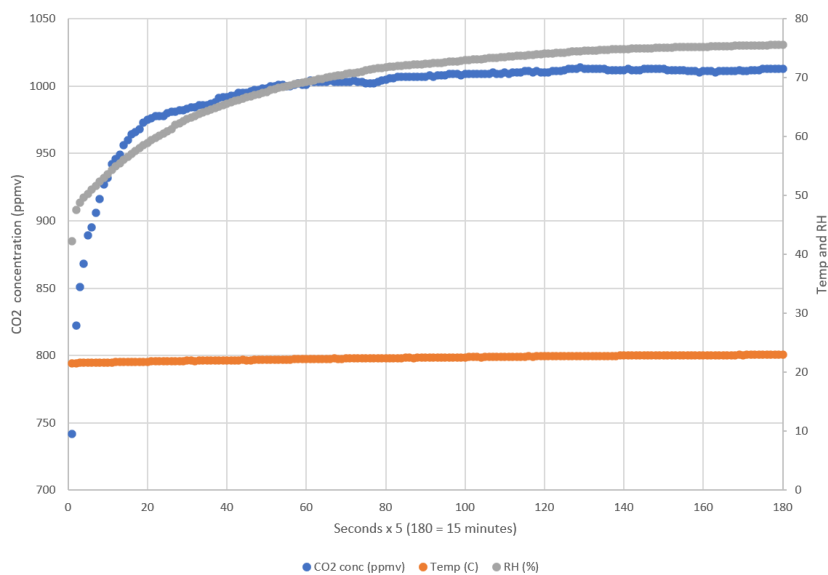
g CO₂/g sorbent: 3.93 e-4

Max desorptions
possible/day: 144

Max CO₂ possible to
remove/day (assuming
equal desorption/absorption times):
56.57 g CO₂/kg sorbent/day

Desorption humidity range: > ~17% RH @ 28 C

Desorption energy consumption: 0 watts (passive desorption)



LIFETIME

Tested up to 30 cycles

DISPOSAL DETAILS

Biodegradable: yes

Toxicity: none