

TITLE:

- Dataset underlying the research of: new insights into the fluidisation characteristics of granular activated carbon for drinking water treatment applications

SHORT DESCRIPTION:

- Granular activated carbon (GAC) filtration is a very important treatment unit operation in drinking water production processes. GAC filtration is widely used for its filtration and adsorption capabilities as a barrier for undesired macro and micro-pollutants. GAC filtration consists of two ascending procedures: filtration procedure, capturing the impurities from the water, in conjunction with a backwash procedure, flushing these impurities out of the system. The prediction of the bed expansion of GAC is complex since the particles are non-spherical, porous and polydisperse. It is complicated to find GAC particle properties such as the wet density, wet mass and the minimum fluidisation porosity. To be able to predict the porosity these values must be known.
- This data set contains numerical data of fluidisation experiments for various flow rates, water temperatures for nine different GAC types. In addition, a large data-set is shared with drying log (evaporation) values. Also, photographic and video material as well as morphological measurements (Camsizer, ImageJ, sieve and microscope) are provided.

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PROJECT:

- This research is part of the project “Hydraulic modelling of liquid-solid fluidisation in drinking water treatment processes” carried out by Waternet, Delft University of Technology, and HU University of Applied Sciences Utrecht and Queen Mary University of London. Financial support came from Waternet Drinking Water Production Department.

SHARING AND ACCESS INFORMATION:

- 4TU.ResearchData
- Delft, 17 March 2021

FORMAT:

- Experimental data

CONTACT INFORMATION:

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ORGANIZATIONS:

- Delft University of Technology, Faculty of Civil Engineering and Geosciences, Department of Water Management
- Delft University of Technology, Faculty of Mechanical, Maritime and Materials Engineering, Department of Process and Energy
- Waternet, Amsterdam (funder)
- HU University of Applied Sciences Utrecht, Institute for Life Science and Chemistry
- Queen Mary University of London, Division of Chemical Engineering, School of Engineering and Materials Science

SUBJECT:

- Hydraulic modelling of multiphase flow systems

KEYWORDS:

- multiphase phenomena
- liquid-solid fluidisation
- drinking water treatment
- granular activated carbon grains

METHODOLOGICAL INFORMATION:

- Experimental data-set

ADDITIONAL TECHNICAL INFORMATION:

► O.J.I. Kramer, P.J. de Moel, J.T. Padding, E.T. Baars, Y.M.F. el Hasadi, E.S. Boek, J.P. van der Hoek, Accurate voidage prediction in fluidisation systems for full-scale drinking water pellet softening reactors using data driven models, *Journal of Water Process Engineering*. 37, 101481 (2020) 1–15.
<https://doi.org/10.1016/j.jwpe.2020.101481>

► O.J.I. Kramer, J.T. Padding, W.H. van Vugt, P.J. de Moel, E.T. Baars, E.S. Boek, J.P. van der Hoek, Improvement of voidage prediction in liquid-solid fluidized beds by inclusion of the Froude number in effective drag relations, *International Journal of Multiphase Flow*. 127, 103261 (2020) 1–13.
<https://doi.org/10.1016/j.ijmultiphaseflow.2020.103261>

1 GAC drying log (evaporation) experiments

GAC drying log (evaporation)

The data-set consists of more than one million individual drying log measured data points.

File: Drying log raw data.xlsm

2 GAC morphological particle properties

Camsizer

File: GAC Camsizer.zip

ImageJ

File: GAC ImageJ.zip

Camsizer

File: GAC Microscope density.zip

Helium pycnometry

File: GAC Helium pycnometer.zip

3 Supporting media of liquid-solid fluidisation experiments

Photos

File: Photos.zip

3.1 Photographs of a full-scale granular activated carbon filtration unit

Photos of a full-scale pellet granular activated carbon filter (Figure 1 and Figure 2) located at the Waternet facilities Weesperkarspel and Leiduin.



Figure 1 Full-scale GAC filter during filtration

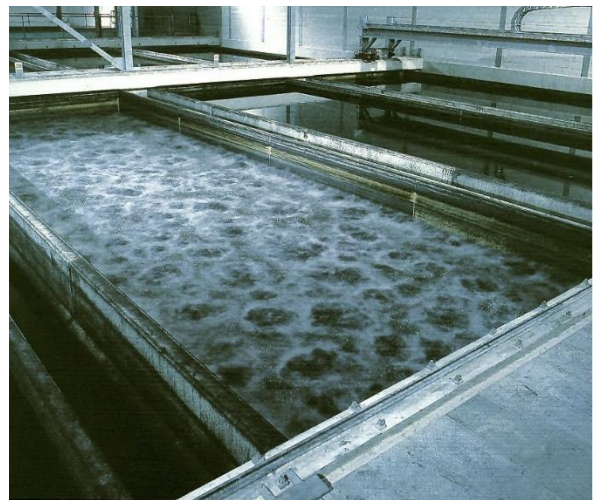


Figure 2 Full-scale GAC filter during backwashing

3.2 Photographs of a fluidisation experiments with the expansion column



Figure 3 Fluidisation experiment
GAC Norit RB 4C (high
flow)



Figure 4 Fluidisation experiment
GAC Norit ROW 0.8
Supra (moderate flow)

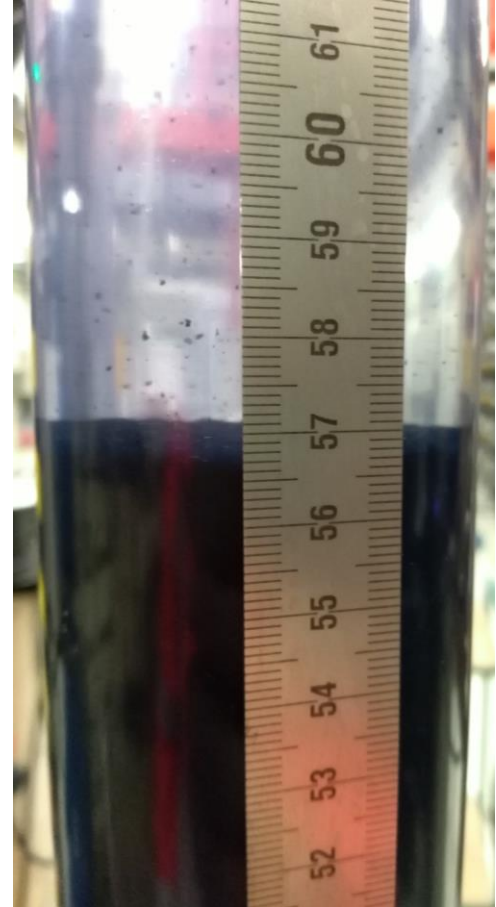


Figure 5 Fluidisation experiment GAC Norit
GAC 830 Supra (low flow)

3.3 Photographs and main characteristics of examined activated carbon samples

In this research, nine different GAC types were examined. Every GAC is referred to by their commercial name.

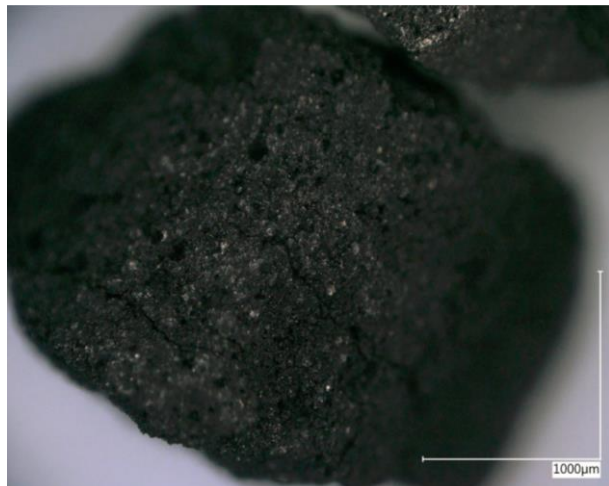


Figure 6 *Aquasorb K-6300 granule*

Commercial name: Aquasorb K-6300
Manufacturer: Jacobi Carbons
Raw material: Fossil (coal)
Composition: 80% reactivated 20% virgin
Shape: Granular (rock)
Colour: Black/Grey
Size range Camsizer: $d_{10} \approx 0.77$ mm
 $d_{50} \approx 1.15$ mm
 $d_{90} \approx 3.10$ mm



Figure 7 *Aquasorb KGA granule*

Commercial name: Aquasorb KGA
Manufacturer: Jacobi Carbons
Raw material: Coconut shells
Composition: 100% virgin
Shape: Granular (rock)
Colour: Black
Size range Camsizer: $d_{10} \approx 0.67$ mm
 $d_{50} \approx 1.07$ mm
 $d_{90} \approx 2.62$ mm



Figure 8 *Filtrasorb 300C granule*

Commercial name: Filtrasorb 300C
Manufacturer: Calgon-Chemviron
Raw material: Fossil (bituminous coal)
Composition: 100% virgin
Shape: Granular (rock)
Colour: Black
Size range Camsizer: $d_{10} \approx 0.66$ mm
 $d_{50} \approx 0.90$ mm
 $d_{90} \approx 2.24$ mm

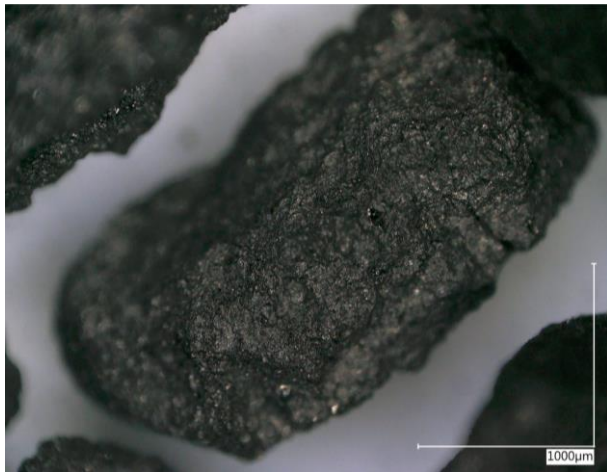


Figure 9 Filtrasorb TL830 granule

Commercial name: Filtrasorb TL830
 Manufacturer: Calgon-Chemviron
 Raw material: Fossil (bituminous coal)
 Composition: 100% virgin
 Shape: Granular (rock)
 Colour: Black
 Size range Camsizer: $d_{10} \approx 0.99$ mm
 $d_{50} \approx 1.31$ mm
 $d_{90} \approx 2.77$ mm



Figure 10 Norit GAC 830 Supra granule

Commercial name: Norit GAC 830 Supra
 Manufacturer: Cabot
 Raw material: Fossil
 Composition: 100% virgin
 Shape: Granular (rock)
 Colour: Black
 Size range Camsizer: $d_{10} \approx 0.64$ mm
 $d_{50} \approx 1.01$ mm
 $d_{90} \approx 2.73$ mm

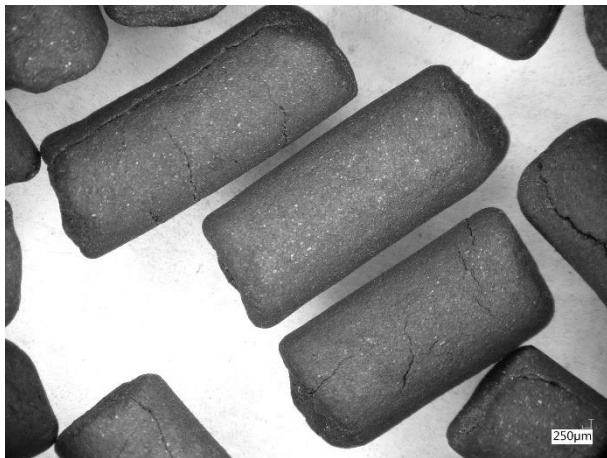


Figure 11 Norit RB 4C granule

Commercial name: Norit RB 4C
 Manufacturer: Cabot
 Raw material: Wood or peat
 Composition: -
 Shape: Extruded (rod)
 Colour: Black
 Size range Camsizer: $d_{10} \approx 3.73$ mm
 $d_{50} \approx 5.16$ mm
 $d_{90} \approx 9.36$ mm

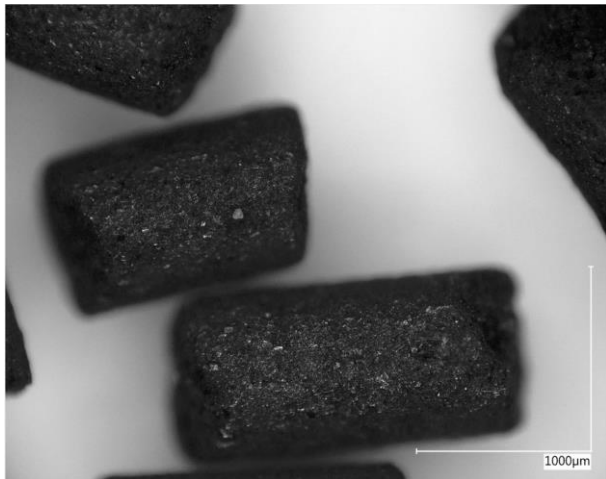


Figure 12 Norit ROW 0.8 Supra granule

Commercial name: Norit ROW 0.8 Supra
 Manufacturer: Cabot
 Raw material: Wood
 Composition: 80% reactivated 20% low activated virgin
 Shape: Extruded (rod)
 Colour: Black
 Size range Camsizer: $d_{10} \approx 0.81$ mm
 $d_{50} \approx 1.19$ mm
 $d_{90} \approx 2.72$ mm

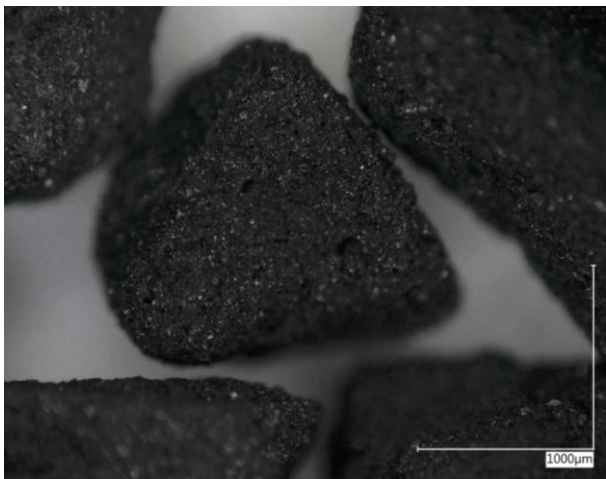


Figure 13 Resorb HC granule

Commercial name: Resorb HC
 Manufacturer: Jacobi Carbons
 Raw material: Fossil
 Composition: -
 Shape: Granular (rock)
 Colour: Black
 Size range Camsizer: $d_{10} \approx 0.60$ mm
 $d_{50} \approx 0.90$ mm
 $d_{90} \approx 2.64$ mm



Figure 14 Saratech Spherical granule

Commercial name: Saratech Spherical
 Manufacturer: Blütcher Technologies
 Raw material: Synthetic polymer
 Composition: 100% virgin
 Shape: Spherical (balls)
 Colour: Black
 Size range Camsizer: $d_{10} \approx 0.41$ mm
 $d_{50} \approx 0.46$ mm
 $d_{90} \approx 0.53$ mm

The following videos are included in the data-set.

Photos

File: Videos.zip

Table 1 Supporting videos

Video	Velocity	Information
Video 001 Aquasorb KGA.wmv	Moderate	Multiple rocks
Video 001 Filtrasorb 300C.wmv	Moderate	Multiple rocks
Video 002 Filtrasorb 300C.wmv	0 [m/h]	Settling
Video 003 Filtrasorb 300C.wmv	High	Near flushing
Video 004 Filtrasorb 300C.wmv	Moderate	Multiple rocks
Video 005 Filtrasorb 300C.wmv	High	5 °C
Video 001 Filtrasorb TL830.wmv	Moderate	Multiple rocks
Video 001 Norit GAC 830 Supra.wmv	High	Multiple rocks
Video 001 Norit RB 4C.wmv	High	Single rod
Video 002 Norit RB 4C.wmv	709 [m/h]	Multiple rods slow motion
Video 003 Norit RB 4C.wmv	733-843 [m/h]	Multiple rods
Video 004 Norit RB 4C.wmv	873 [m/h]	Multiple rods
Video 005 Norit RB 4C.wmv	High	Single rod spinning
Video 006 Norit RB 4C.wmv	266-383 [m/h]	Multiple rods
Video 007 Norit RB 4C.wmv	463-510 [m/h]	Multiple rods
Video 008 Norit RB 4C.wmv	High	Multiple rods
Video 009 Norit RB 4C.wmv	Low	Multiple rods minimum fluidisation
Video 009 Norit 10 4C.wmv	High	Single rod wobbling

4 Experimental raw data

All the data gathered during the filtration and fluidisation experiments are shared. To discriminate the fixed and fluidised regimes in fluidisation measurements, an index 0, 1 or 2 is added to the data.

Legend: status 0: fixed bed

status 1: fluid bed (below highest ΔP_{max})

status 2: fluid bed (above the highest ΔP_{max})

Section Experiment type

4.1 Calibration experiments

4.2 Full-scale long-term experiments with Aquasorb K-6300

4.3 Validation experiments

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4.1 Calibration experiments

The differential pressure was measured with a sensor with an initial off-set within a range of -3 up to 3 mbar.

L-S Fluidisation experiment nr.: 1				Aquasorb K-6300		A =		0.0025		[m ²]		
Material =	GAC	Geldarts: D								dp/D =	0.029	[-]
D =	0.057	[m]	dp.min	dp.max						Off-set(ΔP) = 3	[mbar]	
d10_ij =	1.68	[mm]	1.41	2.01						ΔP_{max} =	0.71	[kPa]
Tavg =	4.2	[°C]								Vm ($\epsilon=0$) =	0.38	[L]
pwet =	1484	[kg/m ³]								Lm =	0.15	[m]
mwet =	0.57	[kg]								vmf =	22.3	[m/h]
L0 =	0.4	[m]								ϵ_0 =	0.62	[m ³ /m ³]
Lmf =	0.43	[m]								cmf =	0.65	[m ³ /m ³]
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference			
[0/1/2/3]	T	Qw	L	$\Delta P(399\text{cm})$	Hydrostatic	T (interp.)	vs	ϵ	ΔP	Hydrostatic		
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m ³ /m ³]	[kPa]	[kPa]		
0	4	0	0.4	3.1	n.a.	4	0	0.62	0.31	n.a.		
0	4.5	15	0.4	1	n.a.	4.5	0.001	0.62	0.1	n.a.		
0	5	26	0.4	3.2	n.a.	5	0.002	0.62	0.32	n.a.		
0	5	36	0.4	4.7	n.a.	5	0.004	0.63	0.47	n.a.		
0	4	42	0.41	5.4	n.a.	4	0.004	0.63	0.54	n.a.		
0	4	48	0.42	6	n.a.	4	0.005	0.64	0.6	n.a.		
0	4	57	0.43	6.7	n.a.	4	0.006	0.65	0.67	n.a.		
1	4	63	0.44	6.6	n.a.	4	0.006	0.66	0.66	n.a.		
1	4	67	0.45	6.8	n.a.	4	0.007	0.66	0.68	n.a.		
1	4	69	0.45	6.8	n.a.	4	0.007	0.67	0.68	n.a.		
1	4	74	0.47	6.8	n.a.	4	0.008	0.67	0.68	n.a.		
1	4	81	0.48	6.8	n.a.	4	0.008	0.68	0.68	n.a.		
1	4	90	0.5	6.9	n.a.	4	0.009	0.7	0.69	n.a.		
1	4	104	0.54	6.9	n.a.	4	0.011	0.72	0.69	n.a.		
1	4	112	0.56	6.9	n.a.	4	0.012	0.73	0.69	n.a.		
1	4	123	0.6	7	n.a.	4	0.013	0.74	0.7	n.a.		
1	4	132	0.63	7	n.a.	4	0.014	0.76	0.7	n.a.		
1	4	143	0.67	7	n.a.	4	0.015	0.77	0.7	n.a.		
1	4	152	0.7	7	n.a.	4	0.016	0.78	0.7	n.a.		
1	4	165	0.77	7.1	n.a.	4	0.018	0.8	0.71	n.a.		
1	4	176	0.84	7.1	n.a.	4	0.019	0.82	0.71	n.a.		
1	4	186	0.92	7.1	n.a.	4	0.02	0.83	0.71	n.a.		
1	5	197	1	7.1	n.a.	5	0.021	0.84	0.71	n.a.		
1	5	207	1.11	7.1	n.a.	5	0.022	0.86	0.71	n.a.		
1	5	217	1.28	7.1	n.a.	5	0.023	0.88	0.71	n.a.		
1	5	227	1.48	7.1	n.a.	5	0.024	0.89	0.71	n.a.		
L-S Fluidisation experiment nr.: 2				Aquasorb K-6300		A =		0.0025		[m ²]		
Material =	GAC	Geldarts: D								dp/D =	0.029	[-]
D =	0.057	[m]	dp.min	dp.max						Off-set(ΔP) = 3.25	[mbar]	
d10_ij =	1.68	[mm]	1.41	2.01						ΔP_{max} =	0.71	[kPa]
Tavg =	10.1	[°C]								Vm ($\epsilon=0$) =	0.38	[L]
pwet =	1484	[kg/m ³]								Lm =	0.15	[m]
mwet =	0.57	[kg]								vmf =	28.2	[m/h]
L0 =	0.4	[m]								ϵ_0 =	0.62	[m ³ /m ³]
Lmf =	0.44	[m]								cmf =	0.66	[m ³ /m ³]
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference			
[0/1/2/3]	T	Qw	L	$\Delta P(399\text{cm})$	Hydrostatic	T (interp.)	vs	ϵ	ΔP	Hydrostatic		
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m ³ /m ³]	[kPa]	[kPa]		
0	10	0	0.4	3.4	n.a.	10	0	0.62	0.34	n.a.		
0	10	14	0.4	0.7	n.a.	10	0.001	0.62	0.07	n.a.		
0	10	26	0.4	2.7	n.a.	10	0.002	0.62	0.27	n.a.		
0	10	33	0.4	3.8	n.a.	10	0.003	0.62	0.38	n.a.		
0	10	39	0.4	4.8	n.a.	10	0.004	0.62	0.48	n.a.		
0	10	48	0.41	5.7	n.a.	10	0.005	0.63	0.57	n.a.		
0	10	57	0.42	6.1	n.a.	10	0.006	0.64	0.61	n.a.		
0	10	67	0.44	6.5	n.a.	10	0.007	0.65	0.65	n.a.		
1	10	72	0.45	6.7	n.a.	10	0.007	0.66	0.67	n.a.		
1	10	80	0.46	6.8	n.a.	10	0.008	0.67	0.68	n.a.		
1	10	88	0.48	6.8	n.a.	10	0.009	0.68	0.68	n.a.		
1	10	98	0.5	6.9	n.a.	10	0.01	0.7	0.69	n.a.		
1	10	107	0.52	6.9	n.a.	10	0.011	0.71	0.69	n.a.		
1	10	116	0.54	6.9	n.a.	10	0.012	0.72	0.69	n.a.		
1	10	124	0.56	6.9	n.a.	10	0.013	0.73	0.69	n.a.		
1	10	131	0.59	6.9	n.a.	10	0.014	0.74	0.69	n.a.		
1	10	142	0.62	6.9	n.a.	10	0.015	0.75	0.69	n.a.		
1	10	151	0.65	6.9	n.a.	10	0.016	0.76	0.69	n.a.		
1	10	161	0.69	7	n.a.	10	0.017	0.78	0.7	n.a.		
1	10	170	0.73	7	n.a.	10	0.018	0.79	0.7	n.a.		
1	10	177	0.77	7	n.a.	10	0.019	0.8	0.7	n.a.		
1	10	187	0.83	7	n.a.	10	0.02	0.81	0.7	n.a.		
1	10	195	0.89	7	n.a.	10	0.021	0.83	0.7	n.a.		
1	10	204	0.96	7	n.a.	10	0.022	0.84	0.7	n.a.		
1	10	212	1.06	7	n.a.	10	0.023	0.85	0.7	n.a.		
1	10	222	1.19	7	n.a.	10	0.024	0.87	0.7	n.a.		
1	11	230	1.29	7.1	n.a.	11	0.025	0.88	0.71	n.a.		
1	11	239	1.41	7.1	n.a.	11	0.026	0.89	0.71	n.a.		
1	11	252	1.6	7.1	n.a.	11	0.027	0.9	0.71	n.a.		
1	11	262	1.75	7.1	n.a.	11	0.028	0.91	0.71	n.a.		
L-S Fluidisation experiment nr.: 3				Aquasorb K-6300		A =		0.0025		[m ²]		

Material =	GAC	Geldarts: D				dp/D =	0.029	[-]		
D =	0.057	[m]	dp_min	dp_max		Off-set(ΔP) = 3	[mbar]			
d10_ij =	1.68	[mm]	1.41	2.01		ΔPmax =	0.72	[kPa]		
Tavg =	16	[°C]				Vm (ε=0) =	0.38	[L]		
pwet =	1484	[kg/m³]				Lm =	0.15	[m]		
mwet =	0.57	[kg]				vmf =	33.7	[m/h]		
L0 =	0.4	[m]				ε0 =	0.62	[m³/m³]		
Lmf =	0.44	[m]				εmf =	0.66	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
[0/1/2/3]	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	17	0	0.4	3.1	n.a.	17	0	0.62	0.31	n.a.
0	17	25	0.4	2.1	n.a.	17	0.002	0.62	0.21	n.a.
0	17	33	0.4	3	n.a.	17	0.003	0.63	0.3	n.a.
0	17	40	0.4	3.8	n.a.	17	0.004	0.63	0.38	n.a.
0	16	45	0.41	4.4	n.a.	16	0.005	0.63	0.44	n.a.
0	16	54	0.41	5.2	n.a.	16	0.006	0.63	0.52	n.a.
0	16	58	0.41	5.7	n.a.	16	0.006	0.64	0.57	n.a.
0	16	66	0.42	6.3	n.a.	16	0.007	0.64	0.63	n.a.
0	16	74	0.43	6.7	n.a.	16	0.008	0.65	0.67	n.a.
0	16	80	0.44	6.8	n.a.	16	0.008	0.66	0.68	n.a.
0	16	86	0.45	6.8	n.a.	16	0.009	0.67	0.68	n.a.
1	16	94	0.47	6.9	n.a.	16	0.01	0.68	0.69	n.a.
1	16	102	0.49	6.8	n.a.	16	0.011	0.69	0.68	n.a.
1	16	107	0.5	6.9	n.a.	16	0.011	0.7	0.69	n.a.
1	16	115	0.52	6.9	n.a.	16	0.012	0.71	0.69	n.a.
1	16	122	0.53	7	n.a.	16	0.013	0.71	0.7	n.a.
1	16	128	0.55	7	n.a.	16	0.014	0.72	0.7	n.a.
1	16	137	0.57	7	n.a.	16	0.014	0.73	0.7	n.a.
1	16	145	0.6	7	n.a.	16	0.015	0.74	0.7	n.a.
1	16	159	0.64	7	n.a.	16	0.017	0.76	0.7	n.a.
1	16	169	0.68	7	n.a.	16	0.018	0.77	0.7	n.a.
1	16	182	0.73	7.1	n.a.	16	0.019	0.79	0.71	n.a.
1	16	189	0.76	7.1	n.a.	16	0.02	0.8	0.71	n.a.
1	16	198	0.82	7.1	n.a.	16	0.021	0.81	0.71	n.a.
1	16	205	0.86	7.1	n.a.	16	0.022	0.82	0.71	n.a.
1	16	217	0.93	7.1	n.a.	16	0.023	0.83	0.71	n.a.
1	16	226	1	7.1	n.a.	16	0.024	0.84	0.71	n.a.
1	16	234	1.08	7.1	n.a.	16	0.025	0.86	0.71	n.a.
1	16	243	1.2	7.1	n.a.	16	0.026	0.87	0.71	n.a.
1	16	253	1.35	7.1	n.a.	16	0.027	0.88	0.71	n.a.
1	16	269	1.6	7.2	n.a.	16	0.029	0.9	0.72	n.a.
L-S Fluidisation experiment nr.: 4										
Material =	GAC	Geldarts: D				A =	0.0025	[m²]		
D =	0.057	[m]	dp_min	dp_max		dp/D =	0.029	[-]		
d10_ij =	1.68	[mm]	1.41	2.01		Off-set(ΔP) = 3	[mbar]			
Tavg =	19.8	[°C]				ΔPmax =	0.69	[kPa]		
pwet =	1484	[kg/m³]				Vm (ε=0) =	0.38	[L]		
mwet =	0.57	[kg]				Lm =	0.15	[m]		
L0 =	0.4	[m]				vmf =	33.3	[m/h]		
Lmf =	0.44	[m]				ε0 =	0.62	[m³/m³]		
						εmf =	0.65	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
[0/1/2/3]	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	18	0	0.4	3.1	n.a.	18	0	0.62	0.31	n.a.
0	19	26	0.39	2.3	n.a.	19	0.002	0.62	0.23	n.a.
0	19	33	0.4	3.1	n.a.	19	0.003	0.62	0.31	n.a.
0	19	40	0.4	3.9	n.a.	19	0.004	0.62	0.39	n.a.
0	19	47	0.4	4.5	n.a.	19	0.005	0.62	0.45	n.a.
0	19	52	0.41	5	n.a.	19	0.005	0.63	0.5	n.a.
0	19	55	0.41	5.3	n.a.	19	0.006	0.63	0.53	n.a.
0	19	65	0.42	5.9	n.a.	19	0.007	0.64	0.59	n.a.
0	19	73	0.43	6.3	n.a.	19	0.007	0.65	0.63	n.a.
0	19	79	0.44	6.5	n.a.	19	0.008	0.65	0.65	n.a.
1	19	85	0.45	6.7	n.a.	19	0.009	0.66	0.67	n.a.
1	19	92	0.46	6.8	n.a.	19	0.01	0.67	0.68	n.a.
1	19	99	0.47	6.8	n.a.	19	0.01	0.68	0.68	n.a.
1	20	105	0.49	6.8	n.a.	20	0.011	0.69	0.68	n.a.
1	20	110	0.5	6.8	n.a.	20	0.012	0.7	0.68	n.a.
1	20	119	0.51	6.8	n.a.	20	0.013	0.7	0.68	n.a.
1	20	122	0.52	6.8	n.a.	20	0.013	0.71	0.68	n.a.
1	20	128	0.54	6.8	n.a.	20	0.014	0.72	0.68	n.a.
1	20	134	0.55	6.8	n.a.	20	0.014	0.72	0.68	n.a.
1	20	144	0.58	6.8	n.a.	20	0.015	0.74	0.68	n.a.
1	20	153	0.6	6.8	n.a.	20	0.016	0.75	0.68	n.a.
1	20	166	0.64	6.9	n.a.	20	0.018	0.76	0.69	n.a.
1	20	175	0.68	6.9	n.a.	20	0.019	0.77	0.69	n.a.
1	20	182	0.7	6.9	n.a.	20	0.019	0.78	0.69	n.a.
1	20	195	0.76	6.9	n.a.	20	0.021	0.8	0.69	n.a.
1	20	202	0.8	6.9	n.a.	20	0.022	0.81	0.69	n.a.
1	20	213	0.85	6.9	n.a.	20	0.023	0.82	0.69	n.a.
1	20	227	0.96	6.9	n.a.	20	0.024	0.84	0.69	n.a.
1	20	234	1.04	6.9	n.a.	20	0.025	0.85	0.69	n.a.
1	20	242	1.13	6.9	n.a.	20	0.026	0.86	0.69	n.a.
1	20	252	1.22	6.9	n.a.	20	0.027	0.87	0.69	n.a.
L-S Fluidisation experiment nr.: 5										
Material =	GAC	Geldarts: D				A =	0.0025	[m²]		
D =	0.057	[m]	dp_min	dp_max		dp/D =	0.029	[-]		
d10_ij =	1.68	[mm]	1.41	2.01		Off-set(ΔP) = 2.25	[mbar]			
Tavg =	26.8	[°C]				ΔPmax =	0.72	[kPa]		
pwet =	1484	[kg/m³]				Vm (ε=0) =	0.38	[L]		
mwet =	0.57	[kg]				Lm =	0.15	[m]		
L0 =	0.4	[m]				vmf =	33.8	[m/h]		
Lmf =	0.44	[m]				ε0 =	0.62	[m³/m³]		
						εmf =	0.65	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
[0/1/2/3]	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	26	0	0.41	2.3	n.a.	26	0	0.63	0.23	n.a.
0	27	25	0.4	1.7	n.a.	27	0.002	0.62	0.17	n.a.
0	27	27	0.4	1.9	n.a.	27	0.003	0.63	0.19	n.a.
0	28	33	0.4	2.4	n.a.	28	0.003	0.63	0.24	n.a.
0	28	37	0.41	2.9	n.a.	28	0.004	0.63	0.29	n.a.
0	28	47	0.41	3.8	n.a.	27	0.005	0.63	0.38	n.a.
0	26	52	0.41	4.4	n.a.	26	0.005	0.63	0.44	n.a.
0	26	58	0.41	4.8	n.a.	26	0.006	0.64	0.48	n.a.
0	26	63	0.42	5.3	n.a.	26	0.006	0.64	0.53	n.a.
0	26	68	0.42	5.6	n.a.	26	0.007	0.64	0.56	n.a.
0	26	73	0.43	6.1	n.a.	26	0.008	0.64	0.61	n.a.
0	26	80	0.43	6.6	n.a.	26	0.008	0.64	0.66	n.a.
0	26	86	0.44	6.9	n.a.	26	0.009	0.65	0.69	n.a.
0	26	89	0.44	6.7	n.a.	26	0.009	0.66	0.67	n.a.
1	26	93	0.45	6.7	n.a.	26	0.01	0.66	0.67	n.a.
1	26	95	0.46	6.9	n.a.	26	0.01	0.67	0.69	n.a.
1	26	101	0.46	6.9	n.a.	26	0.011	0.67	0.69	n.a.
1	26	105	0.47	7	n.a.	26	0.011	0.68	0.7	n.a.
1	26	111	0.48	7.1	n.a.	26	0.012	0.68	0.71	n.a.
1	27	120	0.5	7.1	n.a.	27	0.013	0.69	0.71	n.a.
1	27	127	0.51	7.1	n.a.	27	0.013	0.7	0.71	n.a.
1	27	134	0.52	7.1	n.a.	27	0.014	0.71	0.71	n.a.
1	27	140	0.54	7.1	n.a.	27	0.015	0.72	0.71	n.a.
1	27	147	0.56	7.1	n.a.	27	0.016	0.73	0.71	n.a.

1	27	155	0.58	7.1	n.a.	27	0.016	0.74	0.71	n.a.
1	27	165	0.6	7.1	n.a.	27	0.018	0.75	0.71	n.a.
1	27	173	0.63	7.1	n.a.	27	0.018	0.76	0.71	n.a.
1	27	182	0.66	7.1	n.a.	27	0.019	0.77	0.71	n.a.
1	27	188	0.68	7.1	n.a.	27	0.02	0.78	0.71	n.a.
1	27	195	0.71	7.1	n.a.	27	0.021	0.78	0.71	n.a.
1	27	209	0.77	7.1	n.a.	27	0.022	0.8	0.71	n.a.
1	27	217	0.83	7.1	n.a.	27	0.023	0.81	0.71	n.a.
1	27	228	0.9	7.1	n.a.	27	0.024	0.83	0.71	n.a.
1	27	235	0.95	7.2	n.a.	27	0.025	0.84	0.72	n.a.
1	27	248	1	7.2	n.a.	27	0.027	0.84	0.72	n.a.
1	27	253	1.05	7.2	n.a.	27	0.027	0.85	0.72	n.a.
1	27	262	1.15	7.2	n.a.	27	0.028	0.86	0.72	n.a.
1	27	275	1.27	7.2	n.a.	27	0.03	0.88	0.72	n.a.
1	27	288	1.4	7.2	n.a.	27	0.031	0.89	0.72	n.a.
L-S Fluidisation experiment nr.: 6 Aquasorb KGA A = 0.0025										
Material =	GAC	Geldarts: B				dp/D =	0.021	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	2.75	[mbar]		
d10_ij =	1.23	[mm]	1.07	1.42		ΔP_{max} =	0.58	[kPa]		
Tavg =	4.2	[°C]				Vm ($\epsilon=0$) =	0.38	[L]		
pwet =	1385	[kg/m³]				Lm =	0.14	[m]		
mwet =	0.52	[kg]				vmf =	20	[m/h]		
L0 =	0.34	[m]				$\epsilon 0$ =	0.56	[m³/m³]		
Lmf =	0.38	[m]				cmf =	0.61	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	$\Delta P(399cm)$	Hydrostatic	T (interp.)	vs	ϵ	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	5	0	0.36	2.9	n.a.	5	0	0.58	0.29	n.a.
0	5.5	15	0.36	1.5	n.a.	5.5	0.001	0.59	0.15	n.a.
0	6	26	0.36	3.6	n.a.	6	0.002	0.59	0.36	n.a.
0	6	29	0.37	4	n.a.	6	0.003	0.59	0.4	n.a.
0	6	33	0.37	4.5	n.a.	6	0.003	0.6	0.45	n.a.
0	5	38	0.38	4.9	n.a.	5	0.004	0.61	0.49	n.a.
0	5	41	0.39	5	n.a.	5	0.004	0.61	0.5	n.a.
0	5	46	0.4	5.2	n.a.	5	0.005	0.62	0.52	n.a.
0	5	51	0.41	5.4	n.a.	5	0.005	0.63	0.54	n.a.
1	5	61	0.43	5.4	n.a.	5	0.006	0.65	0.54	n.a.
1	5	73	0.47	5.5	n.a.	5	0.007	0.68	0.55	n.a.
1	5	83	0.49	5.6	n.a.	5	0.009	0.69	0.56	n.a.
1	5	98	0.54	5.6	n.a.	5	0.01	0.72	0.56	n.a.
1	4	105	0.57	5.6	n.a.	4	0.011	0.73	0.56	n.a.
1	4	117	0.61	5.6	n.a.	4	0.012	0.75	0.56	n.a.
1	4	134	0.68	5.7	n.a.	4	0.014	0.78	0.57	n.a.
1	4	146	0.74	5.7	n.a.	4	0.015	0.79	0.57	n.a.
1	4	166	0.87	5.7	n.a.	4	0.018	0.82	0.57	n.a.
1	4	180	0.98	5.7	n.a.	4	0.019	0.84	0.57	n.a.
1	4	191	1.12	5.8	n.a.	4	0.02	0.86	0.58	n.a.
1	4	206	1.32	5.8	n.a.	4	0.022	0.88	0.58	n.a.
1	4	214	1.5	5.8	n.a.	4	0.023	0.9	0.58	n.a.
1	4	221	1.67	5.8	n.a.	4	0.024	0.91	0.58	n.a.
L-S Fluidisation experiment nr.: 7 Aquasorb KGA A = 0.0025										
Material =	GAC	Geldarts: B				dp/D =	0.021	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	2.75	[mbar]		
d10_ij =	1.23	[mm]	1.07	1.42		ΔP_{max} =	0.59	[kPa]		
Tavg =	13.9	[°C]				Vm ($\epsilon=0$) =	0.38	[L]		
pwet =	1385	[kg/m³]				Lm =	0.14	[m]		
mwet =	0.52	[kg]				vmf =	15.6	[m/h]		
L0 =	0.34	[m]				$\epsilon 0$ =	0.56	[m³/m³]		
Lmf =	0.35	[m]				cmf =	0.58	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	$\Delta P(399cm)$	Hydrostatic	T (interp.)	vs	ϵ	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	15	0	0.35	3.1	n.a.	15	0	0.58	0.31	n.a.
0	14	15	0.36	1.3	n.a.	14	0.001	0.59	0.13	n.a.
0	14	26	0.36	3.3	n.a.	14	0.002	0.59	0.33	n.a.
0	14	32	0.35	4.8	n.a.	14	0.003	0.57	0.48	n.a.
0	14	35	0.35	5.6	n.a.	14	0.003	0.57	0.56	n.a.
0	14	38	0.35	5.6	n.a.	14	0.004	0.58	0.56	n.a.
1	14	44	0.36	5.6	n.a.	14	0.004	0.59	0.56	n.a.
1	14	48	0.37	5.7	n.a.	14	0.005	0.6	0.57	n.a.
1	14	55	0.39	5.6	n.a.	14	0.005	0.62	0.56	n.a.
1	14	65	0.41	5.6	n.a.	14	0.007	0.63	0.56	n.a.
1	14	76	0.44	5.6	n.a.	14	0.008	0.65	0.56	n.a.
1	14	80	0.45	5.7	n.a.	14	0.008	0.67	0.57	n.a.
1	13	95	0.49	5.7	n.a.	13	0.01	0.69	0.57	n.a.
1	14	107	0.52	5.7	n.a.	14	0.011	0.71	0.57	n.a.
1	14	121	0.57	5.7	n.a.	14	0.013	0.73	0.57	n.a.
1	14	134	0.61	5.8	n.a.	14	0.014	0.75	0.58	n.a.
1	14	143	0.64	5.8	n.a.	14	0.015	0.76	0.58	n.a.
1	14	152	0.68	5.8	n.a.	14	0.016	0.78	0.58	n.a.
1	14	164	0.74	5.8	n.a.	14	0.017	0.79	0.58	n.a.
1	14	175	0.79	5.8	n.a.	14	0.019	0.81	0.58	n.a.
1	14	185	0.86	5.8	n.a.	14	0.02	0.82	0.58	n.a.
1	14	197	0.97	5.8	n.a.	14	0.021	0.84	0.58	n.a.
1	14	205	1.05	5.8	n.a.	14	0.022	0.85	0.58	n.a.
1	14	212	1.15	5.8	n.a.	14	0.023	0.86	0.58	n.a.
1	14	220	1.25	5.8	n.a.	14	0.023	0.88	0.58	n.a.
1	14	229	1.4	5.8	n.a.	14	0.024	0.89	0.58	n.a.
1	14	233	1.47	5.8	n.a.	14	0.025	0.89	0.58	n.a.
1	14	248	1.8	5.9	n.a.	14	0.027	0.91	0.59	n.a.
1	14	254	1.95	5.9	n.a.	14	0.027	0.92	0.59	n.a.
L-S Fluidisation experiment nr.: 8 Aquasorb KGA A = 0.0025										
Material =	GAC	Geldarts: B				dp/D =	0.021	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	2.75	[mbar]		
d10_ij =	1.23	[mm]	1.07	1.42		ΔP_{max} =	0.57	[kPa]		
Tavg =	18	[°C]				Vm ($\epsilon=0$) =	0.38	[L]		
pwet =	1385	[kg/m³]				Lm =	0.14	[m]		
mwet =	0.52	[kg]				vmf =	15.6	[m/h]		
L0 =	0.34	[m]				$\epsilon 0$ =	0.56	[m³/m³]		
Lmf =	0.35	[m]				cmf =	0.57	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	$\Delta P(399cm)$	Hydrostatic	T (interp.)	vs	ϵ	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	17	0	0.35	3.1	n.a.	17	0	0.58	0.31	n.a.
0	18	10	0.35	1.2	n.a.	18	0.001	0.57	0.12	n.a.
0	18	25	0.34	4	n.a.	18	0.002	0.56	0.4	n.a.
0	18	29	0.34	4.5	n.a.	18	0.003	0.56	0.45	n.a.
0	18	31	0.34	4.8	n.a.	18	0.003	0.56	0.48	n.a.
0	18	33	0.34	5	n.a.	18	0.003	0.57	0.5	n.a.
0	18	38	0.35	5.4	n.a.	18	0.004	0.57	0.54	n.a.
1	18	44	0.36	5.5	n.a.	18	0.004	0.58	0.55	n.a.
1	18	50	0.37	5.5	n.a.	18	0.005	0.59	0.55	n.a.
1	18	56	0.39	5.4	n.a.	18	0.006	0.61	0.54	n.a.
1	18	63	0.4	5.4	n.a.	18	0.006	0.63	0.54	n.a.
1	18	73	0.42	5.4	n.a.	18	0.008	0.64	0.54	n.a.
1	18	85	0.45	5.5	n.a.	18	0.009	0.67	0.55	n.a.
1	18	93	0.47	5.5	n.a.	18	0.01	0.68	0.55	n.a.
1	18	101	0.49	5.5	n.a.	18	0.011	0.69	0.55	n.a.
1	18	110	0.52	5.5	n.a.	18	0.012	0.71	0.55	n.a.
1	18	113	0.53	5.5	n.a.	18	0.012	0.71	0.55	n.a.

1	18	121	0.55	5.6	n.a.	18	0.013	0.72	0.56	n.a.
1	18	127	0.56	5.6	n.a.	18	0.013	0.73	0.56	n.a.
1	18	133	0.59	5.6	n.a.	18	0.014	0.74	0.56	n.a.
1	18	138	0.6	5.6	n.a.	18	0.015	0.75	0.56	n.a.
1	18	146	0.63	5.6	n.a.	18	0.015	0.76	0.56	n.a.
1	18	152	0.65	5.6	n.a.	18	0.016	0.77	0.56	n.a.
1	18	161	0.69	5.6	n.a.	18	0.017	0.78	0.56	n.a.
1	18	172	0.74	5.6	n.a.	18	0.018	0.79	0.56	n.a.
1	18	181	0.79	5.6	n.a.	18	0.019	0.81	0.56	n.a.
1	18	187	0.83	5.6	n.a.	18	0.02	0.81	0.56	n.a.
1	18	193	0.87	5.6	n.a.	18	0.021	0.82	0.56	n.a.
1	18	200	0.92	5.7	n.a.	18	0.021	0.83	0.57	n.a.
1	18	208	1	5.7	n.a.	18	0.022	0.85	0.57	n.a.
1	18	214	1.05	5.7	n.a.	18	0.023	0.85	0.57	n.a.
1	18	222	1.15	5.7	n.a.	18	0.024	0.86	0.57	n.a.
1	18	231	1.26	5.7	n.a.	18	0.025	0.88	0.57	n.a.
1	18	242	1.44	5.7	n.a.	18	0.026	0.89	0.57	n.a.
1	18	254	1.65	5.7	n.a.	18	0.027	0.9	0.57	n.a.
1	18	261	1.85	5.7	n.a.	18	0.028	0.91	0.57	n.a.
1	18	277	2.1	5.7	n.a.	18	0.03	0.92	0.57	n.a.
L-S Fluidisation experiment nr.: 9 Aquasorb KGA A = 0.0025 [m²]										
Material =	GAC	Geldarts: B				dp/D =	0.021	[-]		
D =	0.057	[m]	dp.min	dp.max		Off-set(ΔP) = 2.25		[mbar]		
d10_ij =	1.23	[mm]				ΔPmax =	0.59	[kPa]		
Tavg =	24.6	[°C]				Vm (ε=0) =	0.38	[L]		
pwet =	1385	[kg/m³]				Lm =	0.14	[m]		
mwet =	0.52	[kg]				vmf =	23.5	[m/h]		
L0 =	0.35	[m]				ε0 =	0.57	[m³/m³]		
Lmf =	0.39	[m]				εmf =	0.61	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	26	0	0.35	2.6	n.a.	26	0	0.26	n.a.	n.a.
0	26	13	0.35	1.2	n.a.	26	0.001	0.57	0.12	n.a.
0	26	25	0.35	2.9	n.a.	26	0.002	0.57	0.29	n.a.
0	25	30	0.35	3.5	n.a.	25	0.003	0.58	0.35	n.a.
0	26	35	0.36	4	n.a.	26	0.003	0.58	0.4	n.a.
0	24	39	0.36	4.3	n.a.	24	0.004	0.58	0.43	n.a.
0	24	44	0.36	4.7	n.a.	24	0.004	0.59	0.47	n.a.
0	23	52	0.37	5.2	n.a.	23	0.005	0.6	0.52	n.a.
1	23	63	0.39	5.6	n.a.	23	0.006	0.62	0.56	n.a.
1	25	69	0.4	5.7	n.a.	25	0.007	0.63	0.57	n.a.
1	26	72	0.4	5.6	n.a.	26	0.007	0.63	0.56	n.a.
1	27	79	0.41	5.5	n.a.	27	0.008	0.64	0.55	n.a.
1	25	88	0.43	5.5	0.3	25	0.009	0.65	0.55	0.03
1	25	98	0.46	5.6	n.a.	25	0.01	0.67	0.56	n.a.
1	25	107	0.48	5.6	n.a.	25	0.011	0.69	0.56	n.a.
1	25	115	0.5	5.6	n.a.	25	0.012	0.7	0.56	n.a.
1	25	125	0.52	5.7	n.a.	25	0.013	0.71	0.57	n.a.
1	25	132	0.55	5.7	n.a.	25	0.014	0.72	0.57	n.a.
1	25	142	0.58	5.7	n.a.	25	0.015	0.74	0.57	n.a.
1	25	149	0.6	5.7	n.a.	25	0.016	0.75	0.57	n.a.
1	25	157	0.63	5.7	n.a.	25	0.017	0.76	0.57	n.a.
1	25	165	0.65	5.7	n.a.	25	0.017	0.77	0.57	n.a.
1	25	170	0.67	5.8	n.a.	25	0.018	0.77	0.58	n.a.
1	25	180	0.72	5.8	n.a.	25	0.019	0.79	0.58	n.a.
1	24	187	0.75	5.8	n.a.	24	0.02	0.8	0.58	n.a.
1	24	193	0.78	5.8	n.a.	24	0.021	0.8	0.58	n.a.
1	24	202	0.84	5.8	n.a.	24	0.022	0.82	0.58	n.a.
1	24	213	0.91	5.9	n.a.	24	0.023	0.83	0.59	n.a.
1	24	217	0.96	5.9	n.a.	24	0.023	0.84	0.59	n.a.
1	24	227	1.05	5.9	n.a.	24	0.024	0.85	0.59	n.a.
1	24	234	1.14	5.9	n.a.	24	0.025	0.86	0.59	n.a.
1	24	241	1.25	5.9	n.a.	24	0.026	0.88	0.59	n.a.
1	24	249	1.38	5.9	n.a.	24	0.027	0.89	0.59	n.a.
1	24	256	1.48	5.9	n.a.	24	0.027	0.89	0.59	n.a.
1	24	260	1.55	5.9	n.a.	24	0.028	0.9	0.59	n.a.
L-S Fluidisation experiment nr.: 10 Aquasorb KGA A = 0.0025 [m²]										
Material =	GAC	Geldarts: B				dp/D =	0.021	[-]		
D =	0.057	[m]	dp.min	dp.max		Off-set(ΔP) = 2		[mbar]		
d10_ij =	1.23	[mm]	1.07	1.42		ΔPmax =	0.6	[kPa]		
Tavg =	27.7	[°C]				Vm (ε=0) =	0.38	[L]		
pwet =	1385	[kg/m³]				Lm =	0.14	[m]		
mwet =	0.52	[kg]				vmf =	27.4	[m/h]		
L0 =	0.36	[m]				ε0 =	0.58	[m³/m³]		
Lmf =	0.4	[m]				εmf =	0.62	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	29	0	0.36	2.1	n.a.	29	0	0.58	0.21	n.a.
0	28	15	0.36	1.2	n.a.	28	0.001	0.58	0.12	n.a.
0	28	26	0.36	2.3	n.a.	28	0.002	0.58	0.23	n.a.
0	28	27	0.36	2.6	n.a.	28	0.003	0.58	0.26	n.a.
0	28	29	0.36	2.8	n.a.	28	0.003	0.58	0.28	n.a.
0	28	31	0.36	2.9	n.a.	28	0.003	0.59	0.29	n.a.
0	28	34	0.36	3.2	n.a.	28	0.003	0.59	0.32	n.a.
0	28	36	0.36	3.4	n.a.	28	0.004	0.59	0.34	n.a.
0	28	39	0.36	3.6	n.a.	28	0.004	0.59	0.36	n.a.
0	28	44	0.37	3.9	n.a.	28	0.004	0.59	0.39	n.a.
0	28	47	0.37	4.1	n.a.	28	0.005	0.6	0.41	n.a.
0	28	49	0.37	4.3	n.a.	28	0.005	0.6	0.43	n.a.
0	29	52	0.38	4.4	n.a.	29	0.005	0.6	0.44	n.a.
0	29	58	0.38	4.7	n.a.	29	0.006	0.61	0.47	n.a.
0	29	62	0.39	4.8	n.a.	29	0.006	0.61	0.48	n.a.
0	29	67	0.39	5	n.a.	29	0.007	0.62	0.5	n.a.
0	29	71	0.4	5.1	n.a.	29	0.007	0.62	0.51	n.a.
1	29	78	0.41	5.2	n.a.	29	0.008	0.63	0.52	n.a.
1	28	81	0.42	5.4	n.a.	28	0.008	0.64	0.54	n.a.
1	27	91	0.44	5.5	n.a.	27	0.009	0.66	0.55	n.a.
1	27	97	0.45	5.6	n.a.	27	0.01	0.67	0.56	n.a.
1	27	102	0.46	5.6	n.a.	27	0.011	0.67	0.56	n.a.
1	27	115	0.49	5.7	n.a.	27	0.012	0.69	0.57	n.a.
1	27	121	0.51	5.7	n.a.	27	0.013	0.7	0.57	n.a.
1	28	129	0.52	5.6	n.a.	28	0.014	0.71	0.56	n.a.
1	28	135	0.54	5.6	n.a.	28	0.014	0.72	0.56	n.a.
1	28	143	0.56	5.7	n.a.	28	0.015	0.73	0.57	n.a.
1	28	154	0.59	5.7	n.a.	28	0.016	0.74	0.57	n.a.
1	28	158	0.6	5.7	n.a.	28	0.017	0.75	0.57	n.a.
1	28	165	0.63	5.7	n.a.	28	0.018	0.76	0.57	n.a.
1	28	172	0.65	5.7	n.a.	28	0.018	0.77	0.57	n.a.
1	28	179	0.68	5.7	n.a.	28	0.019	0.77	0.57	n.a.
1	28	185	0.68	5.8	n.a.	28	0.02	0.78	0.58	n.a.
1	28	191	0.73	5.8	n.a.	28	0.02	0.79	0.58	n.a.
1	28	199	0.77	5.8	n.a.	28	0.021	0.8	0.58	n.a.
1	28	204	0.8	5.9	n.a.	28	0.022	0.81	0.59	n.a.
1	28	213	0.85	5.9	n.a.	28	0.023	0.82	0.59	n.a.
1	28	220	0.9	5.9	n.a.	28	0.023	0.83	0.59	n.a.
1	27	227	0.97	6	n.a.	27	0.024	0.84	0.6	n.a.
1	27	242	1.1	6	n.a.	27	0.026	0.86	0.6	n.a.
L-S Fluidisation experiment nr.: 11 Filtrasorb 300C A = 0.0025 [m²]										
Material =	GAC	Geldarts: B				dp/D =	0.021	[-]		

D =	0.057	[m]	dp.min	dp.max	Off-set(ΔP) = 2.75	[mbar]				
d10_ij =	1.23	[mm]	1.07	1.42	ΔPmax =	0.87 [kPa]				
Tavg =	4.3	[°C]			Vm (ε=0) =	0.45 [L]				
pwet =	1489	[kg/m³]			Lm =	0.17 [m]				
mwet =	0.67	[kg]			vmf =	21.9 [m/h]				
L0 =	0.37	[m]			ε0 =	0.52 [m³/m³]				
Lmf =	0.42	[m]			εmf =	0.57 [m³/m³]				
Status bed	Temperature T	Water flow Qw	Bed height L	Pressure difference ΔP(399cm)	Hydrostatic [cm H2O]	Temperature T (interp.)	Velocity vs	Voidage ε	Pressure difference ΔP	Hydrostatic [kPa]
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	4	0	0.37	3.1	n.a.	4	0	0.52	0.31	n.a.
0	4.5	10	0.38	1.6	n.a.	4.5	0.001	0.53	0.16	n.a.
0	5	15	0.38	3.4	n.a.	5	0.001	0.54	0.34	n.a.
0	5	29	0.38	6.1	n.a.	5	0.003	0.54	0.61	n.a.
0	5	34	0.39	6.6	n.a.	5	0.003	0.54	0.66	n.a.
0	5	37	0.39	7.1	n.a.	5	0.004	0.55	0.71	n.a.
0	4	41	0.4	7.3	n.a.	4	0.004	0.55	0.73	n.a.
0	4	46	0.41	7.7	n.a.	4	0.005	0.57	0.77	n.a.
0	4	51	0.41	8	n.a.	4	0.005	0.57	0.8	n.a.
1	4	57	0.42	8.2	n.a.	4	0.006	0.58	0.82	n.a.
1	4	62	0.44	8.3	n.a.	4	0.006	0.59	0.83	n.a.
1	5	70	0.45	8.4	n.a.	5	0.007	0.61	0.84	n.a.
1	5	78	0.47	8.5	n.a.	5	0.008	0.62	0.85	n.a.
1	5	89	0.49	8.5	n.a.	5	0.009	0.64	0.85	n.a.
1	5	99	0.52	8.5	n.a.	5	0.01	0.66	0.85	n.a.
1	5	108	0.54	8.5	n.a.	5	0.011	0.67	0.85	n.a.
1	5	117	0.56	8.5	n.a.	5	0.012	0.68	0.85	n.a.
1	5	126	0.59	8.5	n.a.	5	0.013	0.7	0.85	n.a.
1	4	135	0.61	8.5	n.a.	4	0.014	0.71	0.85	n.a.
1	4	142	0.64	8.5	n.a.	4	0.015	0.72	0.85	n.a.
1	4	154	0.68	8.6	n.a.	4	0.016	0.74	0.86	n.a.
1	4	161	0.7	8.6	n.a.	4	0.017	0.74	0.86	n.a.
1	4	173	0.75	8.6	n.a.	4	0.018	0.76	0.86	n.a.
1	4	183	0.8	8.6	n.a.	4	0.019	0.77	0.86	n.a.
1	4	192	0.85	8.6	n.a.	4	0.02	0.79	0.86	n.a.
1	4	207	0.96	8.6	n.a.	4	0.022	0.81	0.86	n.a.
1	4	218	1.06	8.6	n.a.	4	0.023	0.83	0.86	n.a.
1	4	228	1.2	8.6	n.a.	4	0.024	0.85	0.86	n.a.
1	4	236	1.3	8.6	n.a.	4	0.025	0.86	0.86	n.a.
1	4	244	1.4	8.7	n.a.	4	0.026	0.87	0.87	n.a.
1	4	251	1.55	8.7	n.a.	4	0.027	0.88	0.87	n.a.
L-S Fluidisation experiment nr.: 12 Filtrasorb 300C							[m²]			
Material =	GAC	Geldarts: B			A =	0.0025	dp/D =	0.021	[-]	
D =	0.057	[m]	dp.min	dp.max			Off-set(ΔP) = 3	[mbar]		
d10_ij =	1.23	[mm]	1.07	1.42			ΔPmax =	0.89	[kPa]	
Tavg =	10	[°C]					Vm (ε=0) =	0.45	[L]	
pwet =	1489	[kg/m³]					Lm =	0.17	[m]	
mwet =	0.67	[kg]					vmf =	28.4	[m/h]	
L0 =	0.37	[m]					ε0 =	0.53	[m³/m³]	
Lmf =	0.43	[m]					εmf =	0.59	[m³/m³]	
Status bed	Temperature T	Water flow Qw	Bed height L	Pressure difference ΔP(399cm)	Hydrostatic [cm H2O]	Temperature T (interp.)	Velocity vs	Voidage ε	Pressure difference ΔP	Hydrostatic [kPa]
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	9	0	0.37	3.1	n.a.	9	0	0.53	0.31	n.a.
0	10	15	0.38	2.1	n.a.	10	0.001	0.53	0.21	n.a.
0	10	26	0.38	4.9	n.a.	10	0.002	0.53	0.49	n.a.
0	10	34	0.38	6	n.a.	10	0.003	0.54	0.6	n.a.
0	10	38	0.39	6.4	n.a.	10	0.004	0.54	0.64	n.a.
0	10	43	0.39	6.9	n.a.	10	0.004	0.55	0.69	n.a.
0	10	49	0.4	7.3	n.a.	10	0.005	0.56	0.73	n.a.
0	10	56	0.41	7.8	n.a.	10	0.006	0.57	0.78	n.a.
0	10	63	0.43	8.1	n.a.	10	0.006	0.59	0.81	n.a.
0	10	72	0.44	8.5	n.a.	10	0.007	0.6	0.85	n.a.
1	10	84	0.47	8.4	n.a.	10	0.009	0.62	0.84	n.a.
1	10	95	0.49	8.4	n.a.	10	0.01	0.64	0.84	n.a.
1	10	104	0.51	8.5	n.a.	10	0.011	0.65	0.85	n.a.
1	10	110	0.52	8.5	n.a.	10	0.012	0.66	0.85	n.a.
1	10	116	0.54	8.5	n.a.	10	0.012	0.67	0.85	n.a.
1	10	123	0.56	8.6	n.a.	10	0.013	0.68	0.86	n.a.
1	10	131	0.57	8.6	n.a.	10	0.014	0.69	0.86	n.a.
1	10	143	0.6	8.6	n.a.	10	0.015	0.7	0.86	n.a.
1	10	157	0.65	8.7	n.a.	10	0.017	0.72	0.87	n.a.
1	10	172	0.7	8.7	n.a.	10	0.018	0.74	0.87	n.a.
1	10	181	0.73	8.7	n.a.	10	0.019	0.76	0.87	n.a.
1	10	190	0.77	8.7	n.a.	10	0.02	0.77	0.87	n.a.
1	10	196	0.8	8.7	n.a.	10	0.021	0.77	0.87	n.a.
1	10	209	0.87	8.8	n.a.	10	0.022	0.79	0.88	n.a.
1	10	217	0.91	8.8	n.a.	10	0.023	0.8	0.88	n.a.
1	10	223	0.95	8.8	n.a.	10	0.024	0.81	0.88	n.a.
1	10	231	1.02	8.8	n.a.	10	0.025	0.82	0.88	n.a.
1	10	242	1.11	8.8	n.a.	10	0.026	0.84	0.88	n.a.
1	10	253	1.23	8.9	n.a.	10	0.027	0.85	0.89	n.a.
1	10	261	1.32	8.9	n.a.	10	0.028	0.86	0.89	n.a.
1	10	270	1.47	8.9	n.a.	10	0.029	0.87	0.89	n.a.
1	10	281	1.56	8.9	n.a.	10	0.03	0.88	0.89	n.a.
1	10	289	1.8	8.9	n.a.	10	0.031	0.9	0.89	n.a.
L-S Fluidisation experiment nr.: 13 Filtrasorb 300C							[m²]			
Material =	GAC	Geldarts: B			A =	0.0025	dp/D =	0.021	[-]	
D =	0.057	[m]	dp.min	dp.max			Off-set(ΔP) = 2.75	[mbar]		
d10_ij =	1.23	[mm]	1.07	1.42			ΔPmax =	0.89	[kPa]	
Tavg =	16.9	[°C]					Vm (ε=0) =	0.45	[L]	
pwet =	1489	[kg/m³]					Lm =	0.17	[m]	
mwet =	0.67	[kg]					vmf =	24.6	[m/h]	
L0 =	0.37	[m]					ε0 =	0.53	[m³/m³]	
Lmf =	0.41	[m]					εmf =	0.56	[m³/m³]	
Status bed	Temperature T	Water flow Qw	Bed height L	Pressure difference ΔP(399cm)	Hydrostatic [cm H2O]	Temperature T (interp.)	Velocity vs	Voidage ε	Pressure difference ΔP	Hydrostatic [kPa]
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	17	0	0.37	2.9	n.a.	17	0	0.53	0.29	n.a.
0	17	15	0.37	1.3	n.a.	17	0.001	0.53	0.13	n.a.
0	17	25	0.37	4.2	n.a.	17	0.002	0.53	0.42	n.a.
0	17	26	0.37	4.4	n.a.	17	0.002	0.53	0.44	n.a.
0	17	29	0.38	4.9	n.a.	17	0.003	0.53	0.49	n.a.
0	17	32	0.38	5.3	n.a.	17	0.003	0.53	0.53	n.a.
0	16	37	0.38	6.3	n.a.	16	0.004	0.54	0.63	n.a.
0	17	42	0.38	6.6	n.a.	17	0.004	0.54	0.66	n.a.
0	16	45	0.39	7.3	n.a.	16	0.004	0.54	0.73	n.a.
0	17	48	0.39	7.2	n.a.	17	0.005	0.54	0.72	n.a.
0	17	55	0.4	7.6	n.a.	17	0.006	0.56	0.76	n.a.
0	17	57	0.4	8	n.a.	17	0.006	0.56	0.8	n.a.
1	16	66	0.41	8.5	n.a.	16	0.007	0.57	0.85	n.a.
1	17	68	0.41	8.5	n.a.	17	0.007	0.57	0.85	n.a.
1	17	76	0.43	8.6	n.a.	17	0.008	0.59	0.86	n.a.
1	16	82	0.44	8.6	n.a.	16	0.008	0.6	0.86	n.a.
1	17	82	0.44	8.6	n.a.	17	0.009	0.6	0.86	n.a.
1	17	96	0.47	8.6	n.a.	17	0.01	0.62	0.86	n.a.
1	17	99	0.47	8.6	n.a.	17	0.01	0.63	0.86	n.a.
1	17	106	0.49	8.6	n.a.	17	0.011	0.64	0.86	n.a.
1	17	114	0.51	8.6	n.a.	17	0.012	0.65	0.86	n.a.
1	17	127	0.54	8.6	n.a.	17	0.013	0.67	0.86	n.a.
1	17	135	0.55	8.6	n.a.	17	0.014	0.68	0.86	n.a.

1	17	143	0.57	8.7	n.a.	17	0.015	0.69	0.87	n.a.
1	17	157	0.61	8.7	n.a.	17	0.017	0.71	0.87	n.a.
1	17	166	0.63	8.7	n.a.	17	0.018	0.72	0.87	n.a.
1	17	171	0.65	8.7	n.a.	17	0.018	0.72	0.87	n.a.
1	17	178	0.67	8.7	n.a.	17	0.019	0.73	0.87	n.a.
1	17	183	0.69	8.7	n.a.	17	0.019	0.74	0.87	n.a.
1	17	190	0.71	8.7	n.a.	17	0.02	0.75	0.87	n.a.
1	17	201	0.75	8.8	n.a.	17	0.021	0.76	0.88	n.a.
1	17	209	0.79	8.8	n.a.	17	0.022	0.77	0.88	n.a.
1	17	217	0.83	8.8	n.a.	17	0.023	0.78	0.88	n.a.
1	17	225	0.87	8.8	n.a.	17	0.024	0.79	0.88	n.a.
1	17	235	0.93	8.8	n.a.	17	0.025	0.81	0.88	n.a.
1	17	243	0.99	8.8	n.a.	17	0.026	0.82	0.88	n.a.
1	17	250	1.05	8.8	n.a.	17	0.027	0.83	0.88	n.a.
1	17	260	1.11	8.8	n.a.	17	0.028	0.84	0.88	n.a.
1	17	278	1.28	8.9	n.a.	17	0.03	0.86	0.89	n.a.
1	17	289	1.42	8.9	n.a.	17	0.031	0.87	0.89	n.a.
L-S Fluidisation experiment nr.: 14 Filtrasorb 300C						A =		0.0025		
Material =		GAC	Geldarts: B			[m²]				
D =		0.057	[m]	dp_min	dp_max	dp/D =		0.021	[-]	
d10_ij =		1.23	[mm]	1.07	1.42	Off-set(ΔP) = 2.5 [mbar]				
Tavg =		22	[°C]			ΔPmax =		0.87	[kPa]	
pwet =		1489	[kg/m³]			Vm (ε=0) =		0.45	[L]	
mwet =		0.67	[kg]			Lm =		0.17	[m]	
L0 =		0.37	[m]			vmf =		27.4	[m/h]	
Lmf =		0.41	[m]			ε0 =		0.53	[m³/m³]	
						εmf =		0.57	[m³/m³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	22	0	0.37	2.6	n.a.	22	0	0.53	0.26	n.a.
0	22	25	0.37	3.8	n.a.	22	0.002	0.53	0.38	n.a.
0	22	32	0.37	5	n.a.	22	0.003	0.53	0.5	n.a.
0	22	44	0.38	6.6	n.a.	22	0.004	0.53	0.66	n.a.
0	22	47	0.38	7	n.a.	22	0.005	0.54	0.7	n.a.
0	22	52	0.39	7.5	n.a.	22	0.005	0.54	0.75	n.a.
0	22	63	0.4	8	n.a.	22	0.006	0.56	0.8	n.a.
1	22	70	0.41	8.4	n.a.	22	0.007	0.57	0.84	n.a.
1	22	78	0.42	8.3	n.a.	22	0.008	0.58	0.83	n.a.
1	22	87	0.44	8.3	n.a.	22	0.009	0.59	0.83	n.a.
1	22	94	0.45	8.3	n.a.	22	0.01	0.61	0.83	n.a.
1	22	109	0.48	8.4	n.a.	22	0.011	0.63	0.84	n.a.
1	22	118	0.5	8.4	n.a.	22	0.012	0.64	0.84	n.a.
1	22	123	0.51	8.4	n.a.	22	0.013	0.65	0.84	n.a.
1	22	127	0.52	8.4	n.a.	22	0.013	0.66	0.84	n.a.
1	22	134	0.53	8.4	n.a.	22	0.014	0.66	0.84	n.a.
1	22	145	0.56	8.5	n.a.	22	0.015	0.68	0.85	n.a.
1	22	152	0.57	8.5	n.a.	22	0.016	0.69	0.85	n.a.
1	22	160	0.59	8.5	n.a.	22	0.017	0.7	0.85	n.a.
1	22	171	0.62	8.5	n.a.	22	0.018	0.71	0.85	n.a.
1	22	178	0.64	8.5	n.a.	22	0.019	0.72	0.85	n.a.
1	22	188	0.67	8.6	n.a.	22	0.02	0.73	0.86	n.a.
1	22	201	0.71	8.6	n.a.	22	0.021	0.75	0.86	n.a.
1	22	208	0.74	8.6	n.a.	22	0.022	0.76	0.86	n.a.
1	22	214	0.76	8.6	n.a.	22	0.023	0.77	0.86	n.a.
1	22	222	0.8	8.6	n.a.	22	0.024	0.77	0.86	n.a.
1	22	227	0.82	8.6	n.a.	22	0.024	0.78	0.86	n.a.
1	22	236	0.87	8.6	n.a.	22	0.025	0.79	0.86	n.a.
1	22	241	0.9	8.7	n.a.	22	0.026	0.8	0.87	n.a.
1	22	251	0.95	8.7	n.a.	22	0.027	0.81	0.87	n.a.
1	22	262	1.03	8.7	n.a.	22	0.028	0.82	0.87	n.a.
1	22	274	1.11	8.7	n.a.	22	0.029	0.84	0.87	n.a.
1	22	289	1.26	8.7	n.a.	22	0.031	0.85	0.87	n.a.
L-S Fluidisation experiment nr.: 15 Filtrasorb 300C						A =		0.0025		
Material =		GAC	Geldarts: B			[m²]				
D =		0.057	[m]	dp_min	dp_max	dp/D =		0.021	[-]	
d10_ij =		1.23	[mm]	1.07	1.42	Off-set(ΔP) = 1.5 [mbar]				
Tavg =		31	[°C]			ΔPmax =		0.89	[kPa]	
pwet =		1489	[kg/m³]			Vm (ε=0) =		0.45	[L]	
mwet =		0.67	[kg]			Lm =		0.17	[m]	
L0 =		0.38	[m]			vmf =		32.5	[m/h]	
Lmf =		0.41	[m]			ε0 =		0.53	[m³/m³]	
						εmf =		0.57	[m³/m³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	31	0	0.38	1.8	n.a.	31	0	0.53	0.18	n.a.
0	31	24	0.38	3.5	n.a.	31	0.002	0.53	0.35	n.a.
0	31	30	0.38	4.1	n.a.	31	0.003	0.53	0.41	n.a.
0	31	36	0.38	5	n.a.	31	0.003	0.53	0.5	n.a.
0	31	43	0.38	5.9	n.a.	31	0.004	0.54	0.59	n.a.
0	31	50	0.38	6.5	n.a.	31	0.005	0.54	0.65	n.a.
0	31	54	0.39	6.8	n.a.	31	0.005	0.54	0.68	n.a.
0	31	62	0.39	7.5	n.a.	31	0.006	0.55	0.75	n.a.
0	31	71	0.4	8.3	n.a.	31	0.007	0.56	0.83	n.a.
1	31	83	0.41	8.5	n.a.	31	0.009	0.57	0.85	n.a.
1	31	92	0.43	8.5	n.a.	31	0.01	0.59	0.85	n.a.
1	31	102	0.44	8.5	n.a.	31	0.011	0.6	0.85	n.a.
1	31	112	0.46	8.5	n.a.	31	0.012	0.62	0.85	n.a.
1	31	125	0.48	8.5	n.a.	31	0.013	0.63	0.85	n.a.
1	31	143	0.52	8.6	n.a.	31	0.015	0.66	0.86	n.a.
1	31	158	0.56	8.6	n.a.	31	0.017	0.68	0.86	n.a.
1	31	169	0.58	8.6	n.a.	31	0.018	0.69	0.86	n.a.
1	31	178	0.61	8.6	n.a.	31	0.019	0.71	0.86	n.a.
1	31	191	0.64	8.7	n.a.	31	0.02	0.72	0.87	n.a.
1	31	198	0.66	8.7	n.a.	31	0.021	0.73	0.87	n.a.
1	31	208	0.69	8.7	n.a.	31	0.022	0.74	0.87	n.a.
1	31	213	0.71	8.7	n.a.	31	0.023	0.75	0.87	n.a.
1	31	221	0.74	8.7	n.a.	31	0.024	0.76	0.87	n.a.
1	31	229	0.77	8.8	n.a.	31	0.025	0.77	0.88	n.a.
1	31	239	0.81	8.8	n.a.	31	0.026	0.78	0.88	n.a.
1	31	245	0.84	8.8	n.a.	31	0.026	0.78	0.88	n.a.
1	31	257	0.9	8.8	n.a.	31	0.028	0.8	0.88	n.a.
1	31	268	0.97	8.8	n.a.	31	0.029	0.81	0.88	n.a.
1	31	277	1.03	8.8	n.a.	31	0.03	0.82	0.88	n.a.
1	31	290	1.16	8.9	n.a.	31	0.031	0.84	0.89	n.a.
L-S Fluidisation experiment nr.: 16 Filtrasorb TL830						A =		0.0025		
Material =		GAC	Geldarts: D			[m²]				
D =		0.057	[m]	dp_min	dp_max	dp/D =		0.028	[-]	
d10_ij =		1.61	[mm]	1.35	1.92	Off-set(ΔP) = 2.75 [mbar]				
Tavg =		4	[°C]			ΔPmax =		0.51	[kPa]	
pwet =		1521	[kg/m³]			Vm (ε=0) =		0.24	[L]	
mwet =		0.37	[kg]			Lm =		0.09	[m]	
L0 =		0.24	[m]			vmf =		32.1	[m/h]	
Lmf =		0.27	[m]			ε0 =		0.6	[m³/m³]	
						εmf =		0.65	[m³/m³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	4	0	0.24	2.9	n.a.	4	0	0.6	0.29	n.a.
0	4	27	0.24	2	n.a.	4	0.002	0.6	0.2	n.a.
0	4	46	0.24	3.7	n.a.	4	0.005	0.61	0.37	n.a.
0	4	58	0.25	4.4	n.a.	4	0.006	0.62	0.44	n.a.

0	4	64	0.26	4.6	n.a.	4	0.007	0.62	0.46	n.a.
0	4	74	0.26	4.8	n.a.	4	0.008	0.64	0.48	n.a.
0	4	82	0.27	4.9	n.a.	4	0.008	0.65	0.49	n.a.
0	4	89	0.28	4.9	n.a.	4	0.009	0.66	0.49	n.a.
1	4	99	0.29	4.9	n.a.	4	0.01	0.67	0.49	n.a.
1	4	107	0.31	4.9	n.a.	4	0.011	0.68	0.49	n.a.
1	4	116	0.32	4.9	n.a.	4	0.012	0.7	0.49	n.a.
1	4	135	0.34	4.9	n.a.	4	0.014	0.72	0.49	n.a.
1	4	146	0.36	4.9	n.a.	4	0.015	0.73	0.49	n.a.
1	4	168	0.39	5	n.a.	4	0.018	0.75	0.5	n.a.
1	4	182	0.42	5	n.a.	4	0.019	0.77	0.5	n.a.
1	4	199	0.46	5	n.a.	4	0.021	0.79	0.5	n.a.
1	4	212	0.49	5	n.a.	4	0.023	0.8	0.5	n.a.
1	4	225	0.53	5	n.a.	4	0.024	0.81	0.5	n.a.
1	4	240	0.58	5	n.a.	4	0.026	0.83	0.5	n.a.
1	4	252	0.63	5	n.a.	4	0.027	0.84	0.5	n.a.
1	4	266	0.68	5.1	n.a.	4	0.028	0.85	0.51	n.a.
1	4	274	0.73	5.1	n.a.	4	0.029	0.86	0.51	n.a.
1	4	282	0.78	5.1	n.a.	4	0.03	0.87	0.51	n.a.
1	4	290	0.85	5.1	n.a.	4	0.031	0.88	0.51	n.a.
L-S Fluidisation experiment nr.: 17 Filtrasorb TL830										
Material =	GAC	Geldarts: D			A =	0.0025	[m²]			
D =	0.057	[m]	dp,min	dp,max			dp/D =	0.028	[-]	
d10_ij =	1.61	[mm]	1.35	1.92			Off-set(ΔP) = 3	[mbar]		
Tavg =	8.7	[°C]					ΔPmax =	0.51	[kPa]	
pwet =	1521	[kg/m³]					Vm (ε=0) =	0.24	[L]	
mwet =	0.37	[kg]					Lm =	0.09	[m]	
L0 =	0.24	[m]					vmf =	25.8	[m/h]	
Lmf =	0.25	[m]					ε0 =	0.6	[m³/m³]	
							εmf =	0.61	[m³/m³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference			Temperature	Velocity	Voidage	Pressure difference
	T	Qw	L	ΔP(399cm)	Hydrostatic		T (interp.)	vs	ε	ΔP
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]		[°C]	[m/s]	[m³/m³]	[kPa]
0	9	0	0.24	3.2	n.a.		9	0	0.6	0.32
0	10	26	0.24	1.7	n.a.		10	0.002	0.6	0.17
0	9	29	0.24	1.9	n.a.		9	0.003	0.6	0.19
0	9	34	0.24	2.4	n.a.		9	0.003	0.6	0.24
0	9	45	0.24	3.5	n.a.		9	0.004	0.6	0.35
0	9	52	0.24	4.2	n.a.		9	0.005	0.6	0.42
0	8	56	0.24	4.7	n.a.		8	0.006	0.6	0.47
0	8	64	0.25	4.8	n.a.		8	0.007	0.61	0.48
1	8	69	0.25	4.9	n.a.		8	0.007	0.62	0.49
1	8	78	0.26	4.8	n.a.		8	0.008	0.63	0.48
1	8	84	0.27	4.8	n.a.		8	0.009	0.64	0.48
1	8	91	0.28	4.9	n.a.		8	0.009	0.65	0.49
1	8	102	0.29	4.9	n.a.		8	0.011	0.67	0.49
1	9	113	0.31	4.9	n.a.		9	0.012	0.68	0.49
1	8	124	0.32	4.9	n.a.		8	0.013	0.7	0.49
1	9	137	0.34	4.9	n.a.		9	0.014	0.71	0.49
1	8.5	144	0.35	5	n.a.		8.5	0.015	0.72	0.5
1	9	152	0.36	5	n.a.		9	0.016	0.73	0.5
1	9	159	0.37	5	n.a.		9	0.017	0.74	0.5
1	9	173	0.39	5	n.a.		9	0.018	0.75	0.5
1	9	190	0.43	5	n.a.		9	0.02	0.77	0.5
1	9	199	0.44	5	n.a.		9	0.021	0.78	0.5
1	9	211	0.47	5	n.a.		9	0.023	0.79	0.5
1	9	220	0.49	5	n.a.		9	0.024	0.8	0.5
1	9	227	0.51	5.1	n.a.		9	0.024	0.81	0.51
1	9	233	0.53	5.1	n.a.		9	0.025	0.81	0.51
1	9	244	0.56	5.1	n.a.		9	0.026	0.82	0.51
1	9	253	0.59	5.1	n.a.		9	0.027	0.83	0.51
1	9	261	0.62	5.1	n.a.		9	0.028	0.84	0.51
1	9	270	0.67	5.1	n.a.		9	0.029	0.85	0.51
1	9	279	0.71	5.1	n.a.		9	0.03	0.86	0.51
1	9	289	0.76	5.1	n.a.		9	0.031	0.87	0.51
L-S Fluidisation experiment nr.: 18 Filtrasorb TL830										
Material =	GAC	Geldarts: D			A =	0.0025	[m²]			
D =	0.057	[m]	dp,min	dp,max			dp/D =	0.028	[-]	
d10_ij =	1.61	[mm]	1.35	1.92			Off-set(ΔP) = 2.75	[mbar]		
Tavg =	16	[°C]					ΔPmax =	0.5	[kPa]	
pwet =	1521	[kg/m³]					Vm (ε=0) =	0.24	[L]	
mwet =	0.37	[kg]					Lm =	0.09	[m]	
L0 =	0.23	[m]					vmf =	32.5	[m/h]	
Lmf =	0.25	[m]					ε0 =	0.59	[m³/m³]	
							εmf =	0.62	[m³/m³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference			Temperature	Velocity	Voidage	Pressure difference
	T	Qw	L	ΔP(399cm)	Hydrostatic		T (interp.)	vs	ε	ΔP
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]		[°C]	[m/s]	[m³/m³]	[kPa]
0	16	0	0.23	3	n.a.		16	0	0.59	0.3
0	16	26	0.23	1.6	n.a.		16	0.002	0.58	0.16
0	16	28	0.23	1.9	n.a.		16	0.003	0.58	0.19
0	16	33	0.23	2.3	n.a.		16	0.003	0.58	0.23
0	16	39	0.23	3	n.a.		16	0.004	0.58	0.3
0	16	44	0.23	3.5	n.a.		16	0.004	0.58	0.35
0	16	53	0.23	4	n.a.		16	0.005	0.58	0.4
0	16	60	0.23	4.4	n.a.		16	0.006	0.59	0.44
0	16	66	0.24	4.6	n.a.		16	0.007	0.6	0.46
0	16	79	0.25	4.9	n.a.		16	0.008	0.62	0.49
1	16	90	0.26	4.8	n.a.		16	0.009	0.63	0.48
1	16	97	0.27	4.8	n.a.		16	0.01	0.64	0.48
1	16	106	0.28	4.8	n.a.		16	0.011	0.66	0.48
1	16	116	0.29	4.8	n.a.		16	0.012	0.67	0.48
1	16	121	0.3	4.8	n.a.		16	0.013	0.68	0.48
1	16	130	0.31	4.9	n.a.		16	0.014	0.69	0.49
1	16	137	0.32	4.9	n.a.		16	0.014	0.69	0.49
1	16	149	0.33	4.9	n.a.		16	0.016	0.71	0.49
1	16	160	0.34	4.9	n.a.		16	0.017	0.72	0.49
1	16	176	0.37	4.9	n.a.		16	0.019	0.74	0.49
1	16	186	0.39	4.9	n.a.		16	0.02	0.75	0.49
1	16	202	0.42	5	n.a.		16	0.022	0.77	0.5
1	16	211	0.43	5	n.a.		16	0.023	0.77	0.5
1	16	223	0.46	5	n.a.		16	0.024	0.79	0.5
1	16	234	0.48	5	n.a.		16	0.025	0.8	0.5
1	16	243	0.5	5	n.a.		16	0.026	0.8	0.5
1	16	257	0.54	5	n.a.		16	0.028	0.82	0.5
1	16	267	0.57	5	n.a.		16	0.029	0.83	0.5
1	16	280	0.62	5	n.a.		16	0.03	0.84	0.5
1	16	290	0.7	5	n.a.		16	0.031	0.86	0.5
L-S Fluidisation experiment nr.: 19 Filtrasorb TL830										
Material =	GAC	Geldarts: D			A =	0.0025	[m²]			
D =	0.057	[m]	dp,min	dp,max			dp/D =	0.028	[-]	
d10_ij =	1.61	[mm]	1.35	1.92			Off-set(ΔP) = 2.5	[mbar]		
Tavg =	22	[°C]					ΔPmax =	0.51	[kPa]	
pwet =	1521	[kg/m³]					Vm (ε=0) =	0.24	[L]	
mwet =	0.37	[kg]					Lm =	0.09	[m]	
L0 =	0.23	[m]					vmf =	34.2	[m/h]	
Lmf =	0.25	[m]					ε0 =	0.58	[m³/m³]	
							εmf =	0.61	[m³/m³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference			Temperature	Velocity	Voidage	Pressure difference
	T	Qw	L	ΔP(399cm)	Hydrostatic		T (interp.)	vs	ε	ΔP
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]		[°C]	[m/s]	[m³/m³]	[kPa]
0	22	0	0.23	2.7	n.a.		22	0	0.59	0.27
0	22	26	0.23	1.2	n.a.		22	0.002	0.58	0.12

0	22	32	0.23	1.7	n.a.	22	0.003	0.58	0.17	n.a.
0	22	41	0.23	2.4	n.a.	22	0.004	0.58	0.24	n.a.
0	22	48	0.23	2.9	n.a.	22	0.005	0.58	0.29	n.a.
0	22	53	0.23	3.2	n.a.	22	0.005	0.59	0.32	n.a.
0	22	59	0.23	3.6	n.a.	22	0.006	0.59	0.36	n.a.
0	22	67	0.24	3.9	n.a.	22	0.007	0.6	0.39	n.a.
0	22	80	0.24	4.6	n.a.	22	0.008	0.61	0.46	n.a.
0	22	87	0.25	4.7	n.a.	22	0.009	0.61	0.47	n.a.
1	22	94	0.26	4.7	n.a.	22	0.01	0.62	0.47	n.a.
1	22	110	0.27	4.7	n.a.	22	0.012	0.65	0.47	n.a.
1	22	119	0.28	4.7	n.a.	22	0.013	0.66	0.47	n.a.
1	22	131	0.3	4.7	n.a.	22	0.014	0.67	0.47	n.a.
1	22	138	0.3	4.8	n.a.	22	0.015	0.68	0.48	n.a.
1	22	152	0.32	4.8	n.a.	22	0.016	0.7	0.48	n.a.
1	22	163	0.33	4.8	n.a.	22	0.017	0.71	0.48	n.a.
1	22	173	0.35	4.8	n.a.	22	0.018	0.72	0.48	n.a.
1	22	186	0.37	4.8	n.a.	22	0.02	0.73	0.48	n.a.
1	22	194	0.38	4.8	n.a.	22	0.021	0.74	0.48	n.a.
1	22	202	0.39	4.8	n.a.	22	0.022	0.75	0.48	n.a.
1	22	213	0.41	4.9	n.a.	22	0.023	0.76	0.49	n.a.
1	22	220	0.42	4.9	n.a.	22	0.023	0.77	0.49	n.a.
1	22	230	0.44	4.9	n.a.	22	0.025	0.78	0.49	n.a.
1	22	242	0.47	4.9	n.a.	22	0.026	0.79	0.49	n.a.
1	22	258	0.51	4.9	n.a.	22	0.028	0.81	0.49	n.a.
1	22	265	0.52	4.9	n.a.	22	0.028	0.81	0.49	n.a.
1	22	269	0.54	4.9	n.a.	22	0.029	0.82	0.49	n.a.
1	22	284	0.6	4.9	n.a.	22	0.03	0.83	0.49	n.a.
1	22	289	0.62	4.9	n.a.	22	0.031	0.84	0.49	n.a.
1	22	294	0.64	5	n.a.	22	0.032	0.84	0.5	n.a.
1	22	320	0.74	5	n.a.	22	0.034	0.86	0.5	n.a.
1	22	341	0.85	5.1	n.a.	22	0.037	0.88	0.51	n.a.
L-S Fluidisation experiment nr.: 20 Filtrasorb TL830						A =		0.0025	[m²]	
Material =		GAC		Geldarts: D		dp/D =		0.028	[-]	
D =		0.057		[m]		Off-set(ΔP) = 1.5 [mbar]				
d10_ij =		1.61		[mm]		ΔPmax =		0.52	[kPa]	
Tavg =		32		[°C]		Vm (ε=0) =		0.24	[L]	
pwet =		1521		[kg/m³]		Lm =		0.09	[m]	
mwet =		0.37		[kg]		vmf =		38.7	[m/h]	
L0 =		0.24		[m]		z0 =		0.6	[m³/m³]	
Lmf =		0.25		[m]		zmf =		0.61	[m³/m³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	32	0	0.24	1.6	n.a.	32	0	0.6	0.16	n.a.
0	32	25	0.24	1.2	n.a.	32	0.002	0.6	0.12	n.a.
0	32	31	0.24	1.5	n.a.	32	0.003	0.59	0.15	n.a.
0	32	39	0.24	1.9	n.a.	32	0.004	0.59	0.19	n.a.
0	32	44	0.23	2.2	n.a.	32	0.004	0.59	0.22	n.a.
0	32	53	0.24	2.7	n.a.	32	0.005	0.59	0.27	n.a.
0	32	58	0.24	2.9	n.a.	32	0.006	0.6	0.29	n.a.
0	32	63	0.24	3.2	n.a.	32	0.006	0.6	0.32	n.a.
0	32	68	0.24	3.4	n.a.	32	0.007	0.6	0.34	n.a.
0	32	79	0.24	4.1	n.a.	32	0.008	0.6	0.41	n.a.
0	32	91	0.25	4.6	n.a.	32	0.01	0.61	0.46	n.a.
0	32	98	0.25	4.8	n.a.	32	0.01	0.62	0.48	n.a.
1	32	110	0.26	4.8	n.a.	32	0.012	0.63	0.48	n.a.
1	32	122	0.27	4.8	n.a.	32	0.013	0.65	0.48	n.a.
1	32	135	0.28	4.9	n.a.	32	0.014	0.66	0.49	n.a.
1	32	150	0.3	4.9	n.a.	32	0.016	0.68	0.49	n.a.
1	32	158	0.31	4.9	n.a.	32	0.017	0.69	0.49	n.a.
1	32	172	0.32	5	n.a.	32	0.018	0.7	0.5	n.a.
1	32	185	0.34	5	n.a.	32	0.02	0.72	0.5	n.a.
1	32	199	0.36	5	n.a.	32	0.021	0.73	0.5	n.a.
1	32	214	0.38	5	n.a.	32	0.023	0.74	0.5	n.a.
1	32	220	0.39	5	n.a.	32	0.024	0.75	0.5	n.a.
1	32	236	0.42	5	n.a.	32	0.025	0.77	0.5	n.a.
1	32	249	0.44	5.1	n.a.	32	0.027	0.78	0.51	n.a.
1	32	253	0.45	5.1	n.a.	32	0.027	0.78	0.51	n.a.
1	32	261	0.47	5.1	n.a.	32	0.028	0.79	0.51	n.a.
1	32	271	0.49	5.1	n.a.	32	0.029	0.8	0.51	n.a.
1	32	285	0.53	5.1	n.a.	32	0.031	0.81	0.51	n.a.
1	32	320	0.62	5.1	n.a.	32	0.034	0.84	0.51	n.a.
1	32	348	0.75	5.2	n.a.	32	0.037	0.87	0.52	n.a.
1	32	377	0.91	5.2	n.a.	32	0.041	0.89	0.52	n.a.
1	32	415	1.2	5.2	n.a.	32	0.045	0.91	0.52	n.a.
L-S Fluidisation experiment nr.: 21 Norit GAC 830 Supra						A =		0.0025	[m²]	
Material =		GAC		Geldarts: B		dp/D =		0.02	[-]	
D =		0.057		[m]		Off-set(ΔP) = 2.5 [mbar]				
d10_ij =		1.17		[mm]		ΔPmax =		0.54	[kPa]	
Tavg =		4		[°C]		Vm (ε=0) =		0.3	[L]	
pwet =		1449		[kg/m³]		Lm =		0.11	[m]	
mwet =		0.43		[kg]		vmf =		25	[m/h]	
L0 =		0.28		[m]		z0 =		0.58	[m³/m³]	
Lmf =		0.34		[m]		zmf =		0.65	[m³/m³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	5	0	0.28	2.6	n.a.	5	0	0.58	0.26	n.a.
0	5	15	0.29	1.6	n.a.	5	0.001	0.59	0.16	n.a.
0	5	26	0.29	3.4	n.a.	5	0.002	0.59	0.34	n.a.
0	5	31	0.29	3.8	n.a.	5	0.003	0.59	0.38	n.a.
0	5	38	0.3	4.4	n.a.	5	0.004	0.6	0.44	n.a.
0	5	46	0.31	4.8	n.a.	5	0.005	0.62	0.48	n.a.
0	4	54	0.32	5.1	n.a.	4	0.005	0.63	0.51	n.a.
0	4	64	0.34	5.3	n.a.	4	0.006	0.65	0.53	n.a.
1	4	75	0.36	5.2	n.a.	4	0.008	0.67	0.52	n.a.
1	4	85	0.38	5.3	n.a.	4	0.009	0.69	0.53	n.a.
1	4	93	0.4	5.3	n.a.	4	0.01	0.7	0.53	n.a.
1	4	103	0.43	5.3	n.a.	4	0.011	0.72	0.53	n.a.
1	4	113	0.45	5.4	n.a.	4	0.012	0.74	0.54	n.a.
1	4	122	0.48	5.4	n.a.	4	0.013	0.75	0.54	n.a.
1	4	131	0.51	5.4	n.a.	4	0.014	0.76	0.54	n.a.
1	4	139	0.53	5.4	n.a.	4	0.015	0.77	0.54	n.a.
1	4	151	0.57	5.4	n.a.	4	0.016	0.79	0.54	n.a.
1	4	158	0.6	5.4	n.a.	4	0.017	0.8	0.54	n.a.
1	4	166	0.65	5.4	n.a.	4	0.018	0.81	0.54	n.a.
1	4	173	0.68	5.4	n.a.	4	0.018	0.82	0.54	n.a.
1	4	179	0.72	5.4	n.a.	4	0.019	0.83	0.54	n.a.
1	4	184	0.77	5.4	n.a.	4	0.02	0.84	0.54	n.a.
1	4	193	0.84	5.4	n.a.	4	0.021	0.85	0.54	n.a.
1	4	200	0.92	5.4	n.a.	4	0.021	0.87	0.54	n.a.
1	4	208	1.03	5.4	n.a.	4	0.022	0.88	0.54	n.a.
1	4	214	1.14	5.4	n.a.	4	0.023	0.89	0.54	n.a.
1	4	222	1.3	5.4	n.a.	4	0.024	0.9	0.54	n.a.
L-S Fluidisation experiment nr.: 22 Norit GAC 830 Supra						A =		0.0025	[m²]	
Material =		GAC		Geldarts: B		dp/D =		0.02	[-]	
D =		0.057		[m]		Off-set(ΔP) = 3.25 [mbar]				
d10_ij =		1.17		[mm]		ΔPmax =		0.55	[kPa]	
Tavg =		7.9		[°C]		Vm (ε=0) =		0.3	[L]	
pwet =		1449		[kg/m³]		Lm =		0.11	[m]	
mwet =		0.43		[kg]		vmf =		27	[m/h]	

					ε0 = 0.29		[m]				ε0 = 0.6		[m³/m³]				
Lmf =					0.35		[m]				εmf = 0.66		[m³/m³]				
Status bed		Temperature	Water flow	Bed height	Pressure difference				Temperature		Velocity	Voidage	Pressure difference				
		T	Qw	L	ΔP(399cm)	Hydrostatic			T (interp.)		vs	ε	ΔP	Hydrostatic			
[0/1/2/3]		[°C]	[L/h]	[m]	[mbar]	[cm H2O]			[°C]		[m/s]	[m³/m³]	[kPa]	[kPa]			
0	0	7	0	0.29	3.4	n.a.			7	0	0.6	0.34	n.a.				
0	0	8	15	0.29	1.3	n.a.			8	0.001	0.6	0.13	n.a.				
0	0	8	27	0.29	3	n.a.			8	0.003	0.6	0.3	n.a.				
0	0	8	31	0.3	3.4	n.a.			8	0.003	0.6	0.34	n.a.				
0	0	8	34	0.3	3.6	n.a.			8	0.003	0.6	0.36	n.a.				
0	0	8	38	0.3	3.9	n.a.			8	0.004	0.61	0.39	n.a.				
0	0	8	42	0.31	4.1	n.a.			8	0.004	0.62	0.41	n.a.				
0	0	8	46	0.32	4.4	n.a.			8	0.005	0.63	0.44	n.a.				
0	0	8	54	0.33	4.6	n.a.			8	0.005	0.64	0.46	n.a.				
0	0	8	60	0.34	4.7	n.a.			8	0.006	0.65	0.47	n.a.				
1	1	7	65	0.35	4.9	n.a.			7	0.007	0.66	0.49	n.a.				
1	1	8	70	0.36	5	n.a.			8	0.007	0.67	0.5	n.a.				
1	1	8	76	0.37	5.2	n.a.			8	0.008	0.68	0.52	n.a.				
1	1	8	86	0.39	5.1	n.a.			8	0.009	0.69	0.51	n.a.				
1	1	8	94	0.41	5.1	n.a.			8	0.01	0.71	0.51	n.a.				
1	1	8	108	0.44	5.2	n.a.			8	0.011	0.73	0.52	n.a.				
1	1	8	122	0.47	5.2	n.a.			8	0.013	0.75	0.52	n.a.				
1	1	8	132	0.5	5.2	n.a.			8	0.014	0.76	0.52	n.a.				
1	1	8	144	0.54	5.3	n.a.			8	0.015	0.78	0.53	n.a.				
1	1	8	158	0.59	5.3	n.a.			8	0.017	0.79	0.53	n.a.				
1	1	8	168	0.63	5.3	n.a.			8	0.018	0.81	0.53	n.a.				
1	1	8	174	0.66	5.3	n.a.			8	0.019	0.82	0.53	n.a.				
1	1	8	183	0.71	5.3	n.a.			8	0.019	0.83	0.53	n.a.				
1	1	8	194	0.79	5.4	n.a.			8	0.021	0.84	0.54	n.a.				
1	1	8	205	0.87	5.4	n.a.			8	0.022	0.86	0.54	n.a.				
1	1	8	214	0.97	5.4	n.a.			8	0.023	0.87	0.54	n.a.				
1	1	8	221	1.04	5.4	n.a.			8	0.024	0.88	0.54	n.a.				
1	1	8	229	1.17	5.4	n.a.			8	0.024	0.89	0.54	n.a.				
1	1	8	240	1.4	5.4	n.a.			8	0.026	0.91	0.54	n.a.				
1	1	8	250	1.6	5.5	n.a.			8	0.027	0.92	0.55	n.a.				
1	1	8	262	2	5.5	n.a.			8	0.028	0.94	0.55	n.a.				
L-S Fluidisation experiment nr.: 23 Norit GAC 830 Supra										A =		0.0025		[m²]			
Material =		GAC		Geldarts: B						dp/D =		0.02		[-]			
D =		0.057		[m]		dp_min		dp_max		Off-set(ΔP) = 3		[mbar]					
d10_ij =		1.17		[mm]		0.94		1.44		ΔPmax =		0.54		[kPa]			
Tavg =		13.1		[°C]						Vm (ε=0) =		0.3		[L]			
pwet =		1449		[kg/m³]						Lm =		0.11		[m]			
mwet =		0.43		[kg]						vmf =		18.8		[m/h]			
L0 =		0.29		[m]						ε0 =		0.59		[m³/m³]			
Lmf =		0.29		[m]						εmf =		0.59		[m³/m³]			
Status bed		Temperature	Water flow	Bed height	Pressure difference				Temperature		Velocity	Voidage	Pressure difference				
		T	Qw	L	ΔP(399cm)	Hydrostatic			T (interp.)		vs	ε	ΔP	Hydrostatic			
[0/1/2/3]		[°C]	[L/h]	[m]	[mbar]	[cm H2O]			[°C]		[m/s]	[m³/m³]	[kPa]	[kPa]			
0	0	14	0	0.29	3.2	n.a.			14	0	0.59	0.32	n.a.				
0	0	14	15	0.29	1.2	n.a.			14	0.001	0.59	0.12	n.a.				
0	0	14	26	0.29	2.6	n.a.			14	0.002	0.59	0.26	n.a.				
0	0	14	27	0.29	2.8	n.a.			14	0.002	0.59	0.28	n.a.				
0	0	14	27	0.28	3.2	n.a.			14	0.002	0.58	0.32	n.a.				
0	0	14	32	0.28	3.9	n.a.			14	0.003	0.57	0.39	n.a.				
0	0	14	32	0.29	3.9	n.a.			14	0.003	0.59	0.36	n.a.				
0	0	14	34	0.28	4.2	n.a.			14	0.003	0.58	0.42	n.a.				
0	0	14	34	0.29	3.9	n.a.			14	0.003	0.59	0.39	n.a.				
0	0	14	34	0.28	4.4	n.a.			14	0.003	0.58	0.44	n.a.				
0	0	14	39	0.28	5	n.a.			14	0.004	0.58	0.5	n.a.				
0	0	14	40	0.29	4.7	n.a.			14	0.004	0.59	0.47	n.a.				
0	0	13	45	0.3	5.1	n.a.			13	0.004	0.6	0.51	n.a.				
0	0	14	46	0.3	5.1	n.a.			14	0.005	0.6	0.51	n.a.				
0	0	13	52	0.3	5.2	n.a.			13	0.005	0.61	0.52	n.a.				
1	1	13	58	0.32	5.2	n.a.			13	0.006	0.63	0.52	n.a.				
1	1	13	64	0.33	5.2	n.a.			13	0.007	0.64	0.52	n.a.				
1	1	13	73	0.34	5.2	n.a.			13	0.007	0.65	0.52	n.a.				
1	1	13	79	0.35	5.1	n.a.			13	0.008	0.66	0.51	n.a.				
1	1	13	88	0.37	5.2	n.a.			13	0.009	0.68	0.52	n.a.				
1	1	13	101	0.4	5.2	n.a.			13	0.011	0.7	0.52	n.a.				
1	1	13	107	0.41	5.2	n.a.			13	0.011	0.71	0.52	n.a.				
1	1	13	115	0.43	5.2	n.a.			13	0.012	0.72	0.52	n.a.				
1	1	13	123	0.45	5.2	n.a.			13	0.013	0.73	0.52	n.a.				
1	1	13.5	136	0.48	5.2	n.a.			13.5	0.014	0.75	0.52	n.a.				
1	1	13	154	0.53	5.3	n.a.			13	0.018	0.77	0.53	n.a.				
1	1	13	170	0.59	5.3	n.a.			13	0.018	0.79	0.53	n.a.				
1	1	14	181	0.63	5.3	n.a.			14	0.019	0.81	0.53	n.a.				
1	1	13	196	0.72	5.3	n.a.			13	0.021	0.83	0.53	n.a.				
1	1	13	202	0.76	5.3	n.a.			13	0.022	0.84	0.53	n.a.				
1	1	14	215	0.85	5.3	n.a.			14	0.023	0.86	0.53	n.a.				
1	1	14	222	0.92	5.3	n.a.			14	0.024	0.87	0.53	n.a.				
1	1	13.5	230	0.99	5.3	n.a.			13.5	0.025	0.88	0.53	n.a.				
1	1	13	240	1.1	5.4	n.a.			13	0.026	0.89	0.54	n.a.				
1	1	13	252	1.25	5.4	n.a.			13	0.027	0.9	0.54	n.a.				
1	1	13	259	1.35	5.4	n.a.			13	0.028	0.91	0.54	n.a.				
1	1	13	271	1.55	5.4	n.a.			13	0.029	0.92	0.54	n.a.				
1	1	13	283	2	5.4	n.a.			13	0.03	0.94	0.54	n.a.				
L-S Fluidisation experiment nr.: 24 Norit GAC 830 Supra										A =		0.0025		[m²]			
Material =		GAC		Geldarts: B						dp/D =		0.02		[-]			
D =		0.057		[m]		dp_min		dp_max		Off-set(ΔP) = 2.5		[mbar]					
d10_ij =		1.17		[mm]		0.94		1.44		ΔPmax =		0.52		[kPa]			
Tavg =		22		[°C]						Vm (ε=0) =		0.3		[L]			
pwet =		1449		[kg/m³]						Lm =		0.11		[m]			
mwet =		0.43		[kg]						vmf =		27.4		[m/h]			
L0 =		0.29		[m]						ε0 =		0.6		[m³/m³]			
Lmf =		0.33		[m]						εmf =		0.64		[m³/m³]			
Status bed		Temperature	Water flow	Bed height	Pressure difference				Temperature		Velocity	Voidage	Pressure difference				
		T	Qw	L	ΔP(399cm)	Hydrostatic			T (interp.)		vs	ε	ΔP	Hydrostatic			
[0/1/2/3]		[°C]	[L/h]	[m]	[mbar]	[cm H2O]			[°C]		[m/s]	[m³/m³]	[kPa]	[kPa]			
0	0	21	0	0.3	2.6	n.a.			21	0	0.6	0.26	n.a.				
0	0	21	15	0.29	0.9	n.a.			21	0.001	0.6	0.09	n.a.				
0	0	21	27	0.29	2.4	n.a.			21	0.002	0.6	0.24	n.a.				
0	0	21	29	0.29	2.7	n.a.			21	0.003	0.6	0.27	n.a.				
0	0	21	32	0.29	2.9	n.a.			21	0.003	0.6	0.29	n.a.				
0	0	21	36	0.29	3.3	n.a.			21	0.003	0.6	0.33	n.a.				
0	0	21	37	0.3	3.4	n.a.			21	0.004	0.6	0.34	n.a.				
0	0	21	42	0.3	3.8	n.a.			21	0.004	0.6	0.38	n.a.				
0	0	21	46	0.3	4.1	n.a.			21	0.005	0.61	0.41	n.a.				
0	0	21	54	0.31	4.5	n.a.			21	0.005	0.62	0.45	n.a.				
0	0	21	61	0.32	4.8	n.a.			21	0.006	0.63	0.48	n.a.				
0	0	22	67	0.33	4.8	n.a.			22	0.007	0.64	0.48	n.a.				
1	1	22	75	0.34	5.1	n.a.			22	0.008	0.65	0.51	n.a.				
1	1	22	86	0.35	5.1	n.a.			22	0.009	0.66	0.51	n.a.				
1	1	22	93	0.37	5.1	n.a.			22	0.01	0.68	0.51	n.a.				
1	1	22	101	0.38	5.1	n.a.			22	0.011	0.69	0.51	n.a.				
1	1	22	112	0.4	5.2	n.a.			22	0.012	0.71	0.52	n.a.				
1	1	22	125	0.43	5.2	n.a.			22	0.013	0.72	0.52	n.a.				

1	22	186	0.61	5.2	n.a.	22	0.02	0.8	0.52	n.a.
1	22	194	0.64	5.2	n.a.	22	0.021	0.81	0.52	n.a.
1	22	208	0.71	5.2	n.a.	22	0.022	0.83	0.52	n.a.
1	22	217	0.77	5.2	n.a.	22	0.023	0.84	0.52	n.a.
1	22	233	0.87	5.2	n.a.	22	0.025	0.86	0.52	n.a.
1	22	242	0.96	5.2	n.a.	22	0.026	0.87	0.52	n.a.
1	22	254	1.09	5.2	n.a.	22	0.027	0.89	0.52	n.a.
1	22	268	1.3	5.2	n.a.	22	0.029	0.9	0.52	n.a.
1	22	278	1.5	5.2	n.a.	22	0.03	0.92	0.52	n.a.
L-S Fluidisation experiment nr.: 25 Norit GAC 830 Supra						A =				
Material =	GAC	Geldarts: B				0.0025	[m²]			
D =	0.057	[m]	dp,min	dp,max		dp/D =	0.02	[-]		
d10_ij =	1.17	[mm]	0.94	1.44		Off-set(ΔP) =	1.75	[mbar]		
Tavg =	30.5	[°C]				ΔPmax =	0.55	[kPa]		
pwet =	1449	[kg/m³]				Vm (ε=0) =	0.3	[L]		
mwet =	0.43	[kg]				Lm =	0.11	[m]		
L0 =	0.29	[m]				vmf =	33.3	[m/h]		
Lmf =	0.29	[m]				ε0 =	0.59	[m³/m³]		
						εmf =	0.6	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	32	0	0.29	1.8	n.a.	32	0	0.59	0.18	n.a.
0	31	15	0.29	0.6	n.a.	31	0.001	0.59	0.06	n.a.
0	31	26	0.29	2.1	n.a.	31	0.002	0.59	0.21	n.a.
0	31	29	0.29	2.5	n.a.	31	0.003	0.59	0.25	n.a.
0	31	33	0.29	2.8	n.a.	31	0.003	0.59	0.28	n.a.
0	31	35	0.29	3.1	n.a.	31	0.003	0.59	0.31	n.a.
0	31	41	0.29	3.4	n.a.	31	0.004	0.59	0.34	n.a.
0	31	45	0.29	3.6	n.a.	31	0.004	0.6	0.36	n.a.
0	31	48	0.3	3.7	n.a.	31	0.005	0.6	0.37	n.a.
0	31	53	0.3	4	n.a.	31	0.005	0.61	0.4	n.a.
0	31	59	0.31	4.2	n.a.	31	0.006	0.62	0.42	n.a.
0	31	63	0.31	4.4	n.a.	31	0.006	0.62	0.44	n.a.
0	31	70	0.32	4.6	n.a.	31	0.007	0.63	0.46	n.a.
0	31	76	0.32	4.7	n.a.	31	0.008	0.63	0.47	n.a.
0	31	80	0.33	4.8	n.a.	31	0.008	0.64	0.48	n.a.
0	31	85	0.33	5	n.a.	31	0.009	0.65	0.5	n.a.
1	31	95	0.35	5.2	n.a.	31	0.01	0.66	0.52	n.a.
1	31	102	0.36	5.2	n.a.	31	0.011	0.67	0.52	n.a.
1	31	112	0.38	5.2	n.a.	31	0.012	0.68	0.52	n.a.
1	31	119	0.39	5.2	n.a.	31	0.012	0.69	0.52	n.a.
1	31	126	0.4	5.2	n.a.	31	0.013	0.7	0.52	n.a.
1	31	131	0.42	5.2	n.a.	31	0.014	0.71	0.52	n.a.
1	31	139	0.43	5.3	n.a.	31	0.015	0.72	0.53	n.a.
1	31	147	0.45	5.3	n.a.	31	0.016	0.73	0.53	n.a.
1	31	156	0.46	5.3	n.a.	31	0.017	0.74	0.53	n.a.
1	31	167	0.49	5.3	n.a.	31	0.018	0.76	0.53	n.a.
1	31	174	0.51	5.3	n.a.	31	0.018	0.76	0.53	n.a.
1	31	182	0.53	5.3	n.a.	31	0.019	0.77	0.53	n.a.
1	30	193	0.57	5.4	n.a.	30	0.021	0.79	0.54	n.a.
1	30	201	0.6	5.4	n.a.	30	0.021	0.8	0.54	n.a.
1	30	214	0.64	5.4	n.a.	30	0.023	0.81	0.54	n.a.
1	30	220	0.68	5.4	n.a.	30	0.024	0.82	0.54	n.a.
1	30	227	0.71	5.4	n.a.	30	0.024	0.83	0.54	n.a.
1	30	239	0.79	5.4	n.a.	30	0.026	0.84	0.54	n.a.
1	30	243	0.82	5.4	n.a.	30	0.026	0.85	0.54	n.a.
1	30	254	0.89	5.4	n.a.	30	0.027	0.86	0.54	n.a.
1	30	262	0.96	5.5	n.a.	30	0.028	0.87	0.55	n.a.
1	30	271	1.08	5.5	n.a.	30	0.029	0.89	0.55	n.a.
1	30	285	1.25	5.5	n.a.	30	0.031	0.9	0.55	n.a.
L-S Fluidisation experiment nr.: 26 Norit RB 4C						A =				
Material =	GAC	Geldarts: D				0.0025	[m²]			
D =	0.057	[m]	dp,min	dp,max		dp/D =	0.081	[-]		
d10_ij =	4.62	[mm]	4.05	5.28		Off-set(ΔP) =	2.29	[mbar]		
Tavg =	4.4	[°C]				ΔPmax =	1.04	[kPa]		
pwet =	1500	[kg/m³]				Vm (ε=0) =	0.32	[L]		
mwet =	0.48	[kg]				Lm =	0.12	[m]		
L0 =	0.33	[m]				vmf =	64.6	[m/h]		
Lmf =	0.33	[m]				ε0 =	0.61	[m³/m³]		
						εmf =	0.62	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	6	0	0.33	2.4	n.a.	6	0	0.61	0.24	n.a.
0	5	0	0.33	0.4	n.a.	5	0	0.62	0.04	n.a.
0	6	28	0.33	0.8	n.a.	6	0.003	0.61	0.08	n.a.
0	6	37	0.33	1.1	n.a.	6	0.004	0.61	0.11	n.a.
0	6	52	0.33	1.7	n.a.	6	0.005	0.61	0.17	n.a.
0	6	71	0.33	2.6	n.a.	6	0.007	0.61	0.26	n.a.
0	5	90	0.32	3.5	n.a.	5	0.009	0.61	0.35	n.a.
0	5	105	0.32	4.3	n.a.	5	0.011	0.61	0.43	n.a.
0	5	112	0.31	5	n.a.	5	0.012	0.59	0.5	n.a.
0	5	128	0.33	5.5	n.a.	5	0.013	0.61	0.55	n.a.
0	5	138	0.33	6	n.a.	5	0.015	0.61	0.6	n.a.
0	5	146	0.33	6.6	n.a.	5	0.015	0.61	0.66	n.a.
0	5	153	0.32	6.9	n.a.	5	0.016	0.61	0.69	n.a.
0	5	154	0.33	6.9	n.a.	5	0.016	0.62	0.69	n.a.
1	5	165	0.33	7.4	n.a.	5	0.018	0.62	0.74	n.a.
1	5	171	0.34	7.3	n.a.	5	0.018	0.63	0.73	n.a.
1	5	179	0.34	7.2	n.a.	5	0.019	0.63	0.72	n.a.
1	4	190	0.35	7.2	n.a.	4	0.02	0.64	0.72	n.a.
1	4	201	0.36	7.2	n.a.	4	0.021	0.65	0.72	n.a.
1	5	205	0.35	7	n.a.	5	0.022	0.64	0.7	n.a.
1	4	215	0.36	7.2	n.a.	4	0.023	0.65	0.72	n.a.
1	4	229	0.38	7.3	n.a.	4	0.024	0.66	0.73	n.a.
1	4	243	0.39	7.3	n.a.	4	0.026	0.67	0.73	n.a.
1	4	252	0.39	7.4	n.a.	4	0.027	0.68	0.74	n.a.
1	4	264	0.4	7.4	n.a.	4	0.028	0.69	0.74	n.a.
1	5	270	0.4	7.2	n.a.	5	0.029	0.68	0.72	n.a.
1	4	279	0.41	7.4	n.a.	4	0.03	0.69	0.74	n.a.
1	4	290	0.42	7.5	n.a.	4	0.031	0.7	0.75	n.a.
1	5	313	0.43	7.3	n.a.	5	0.034	0.71	0.73	n.a.
1	5	370	0.49	7.5	n.a.	5	0.04	0.74	0.75	n.a.
1	5	419	0.53	7.8	n.a.	5	0.045	0.76	0.78	n.a.
1	5	472	0.59	8.1	n.a.	5	0.051	0.78	0.81	n.a.
1	4	556	0.68	8.5	n.a.	4	0.06	0.81	0.85	n.a.
1	4	632	0.83	8.8	n.a.	4	0.068	0.84	0.88	n.a.
1	4	714	1.03	9.5	n.a.	4	0.077	0.87	0.95	n.a.
1	4	785	1.22	10	n.a.	4	0.085	0.89	1	n.a.
1	4	830	1.37	10.2	n.a.	4	0.09	0.9	1.02	n.a.
1	5	847	1.44	10.3	n.a.	5	0.092	0.91	1.03	n.a.
1	5	905	1.65	10.4	n.a.	5	0.098	0.92	1.04	n.a.
L-S Fluidisation experiment nr.: 27 Norit RB 4C						A =				
Material =	GAC	Geldarts: D				0.0025	[m²]			
D =	0.057	[m]	dp,min	dp,max		dp/D =	0.081	[-]		
d10_ij =	4.62	[mm]	4.05	5.28		Off-set(ΔP) =	2.05	[mbar]		
Tavg =	17.5	[°C]				ΔPmax =	0.76	[kPa]		
pwet =	1500	[kg/m³]				Vm (ε=0) =	0.32	[L]		
mwet =	0.48	[kg]				Lm =	0.12	[m]		
L0 =	0.33	[m]				vmf =	71.3	[m/h]		
Lmf =	0.33	[m]				ε0 =	0.61	[m³/m³]		
						εmf =	0.62	[m³/m³]		

Status bed	Temperature T	Water flow Qw	Bed height L	Pressure difference ΔP(399cm)		Temperature T (interp.)	Velocity vs	Voidage ε	Pressure difference ΔP	
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	17	0	0.33	2.1	n.a.	17	0	0.62	0.21	n.a.
0	17	0	0.33	0	n.a.	17	0	0.62	0	n.a.
0	17	26	0.33	0.5	n.a.	17	0.002	0.62	0.05	n.a.
0	17	44	0.33	1	n.a.	17	0.004	0.62	0.1	n.a.
0	17	64	0.33	1.6	n.a.	17	0.006	0.62	0.16	n.a.
0	17	80	0.33	2.2	n.a.	17	0.008	0.62	0.22	n.a.
0	17	99	0.33	3	n.a.	17	0.01	0.62	0.3	n.a.
0	17	117	0.33	3.8	n.a.	17	0.012	0.62	0.38	n.a.
0	17	132	0.33	4.5	n.a.	17	0.014	0.62	0.45	n.a.
0	17	154	0.33	5.6	n.a.	17	0.016	0.62	0.56	n.a.
0	17	170	0.33	6.6	n.a.	17	0.018	0.62	0.66	n.a.
0	17	182	0.33	6.8	n.a.	17	0.019	0.62	0.68	n.a.
1	17	194	0.34	6.8	n.a.	17	0.021	0.63	0.68	n.a.
1	17	214	0.35	6.9	n.a.	17	0.023	0.64	0.69	n.a.
1	17	220	0.35	6.8	n.a.	17	0.023	0.64	0.68	n.a.
1	18	233	0.36	6.9	n.a.	18	0.025	0.65	0.69	n.a.
1	17	234	0.36	6.9	n.a.	17	0.025	0.65	0.69	n.a.
1	18	245	0.37	6.9	n.a.	18	0.026	0.66	0.69	n.a.
1	18	249	0.37	6.9	n.a.	18	0.027	0.66	0.69	n.a.
1	17	260	0.38	7	n.a.	17	0.028	0.67	0.7	n.a.
1	18	261	0.38	7	n.a.	18	0.028	0.67	0.7	n.a.
1	18	277	0.4	7	n.a.	18	0.03	0.68	0.7	n.a.
1	18	290	0.4	7	n.a.	18	0.031	0.69	0.7	n.a.
1	18	293	0.4	7	n.a.	18	0.031	0.68	0.7	n.a.
1	18	300	0.41	7	n.a.	18	0.032	0.69	0.7	n.a.
1	18	330	0.47	7.2	n.a.	18	0.035	0.73	0.72	n.a.
1	18	362	0.49	7.2	n.a.	18	0.039	0.74	0.72	n.a.
1	17	400	0.52	7.3	n.a.	17	0.043	0.75	0.73	n.a.
1	17	495	0.59	7.5	n.a.	17	0.053	0.78	0.75	n.a.
1	17	515	0.62	7.6	n.a.	17	0.056	0.79	0.76	n.a.

L-S Fluidisation experiment nr.: 28 Norit RB 4C

Material = GAC
D = 0.057
d10_ij = 4.62
Tavg = 18.8
pwet = 1500
mwet = 0.48
L0 = 0.33
Lmf = 0.34

Geldarts: D

dp,min

dp,max

A =

0.0025

[m²]

dp/D = 0.081

Off-set(ΔP) = 1.75

ΔPmax = 0.86

Vm (ε=0) = 0.32

Lm = 0.12

vmf = 71.3

ε0 = 0.61

εmf = 0.62

[-]

[mbar]

[kPa]

[L]

[m]

[m³/h]

[m³/m³]

[m³/m³]

Status bed	Temperature T	Water flow Qw	Bed height L	Pressure difference ΔP(399cm)		Temperature T (interp.)	Velocity vs	Voidage ε	Pressure difference ΔP	
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	17	0	0.33	2.1	n.a.	17	0	0.62	0.21	n.a.
0	18	0	0.33	0.2	n.a.	18	0	0.62	0.02	n.a.
0	17	26	0.33	0.8	n.a.	17	0.002	0.62	0.08	n.a.
0	17	44	0.33	1.3	n.a.	17	0.004	0.62	0.13	n.a.
0	17	64	0.33	1.9	n.a.	17	0.006	0.62	0.19	n.a.
0	17	80	0.33	2.5	n.a.	17	0.008	0.62	0.25	n.a.
0	17	99	0.33	3.3	n.a.	17	0.01	0.62	0.33	n.a.
0	17	117	0.33	4.1	n.a.	17	0.012	0.62	0.41	n.a.
0	17	132	0.33	4.9	n.a.	17	0.014	0.62	0.49	n.a.
0	17	154	0.33	6	n.a.	17	0.016	0.62	0.6	n.a.
0	17	170	0.33	6.9	n.a.	17	0.018	0.62	0.69	n.a.
1	17	182	0.33	7.1	n.a.	17	0.019	0.62	0.71	n.a.
1	17	194	0.34	7.1	n.a.	17	0.021	0.63	0.71	n.a.
1	17	214	0.35	7.2	n.a.	17	0.023	0.64	0.72	n.a.
1	18	233	0.36	7.2	n.a.	18	0.025	0.65	0.72	n.a.
1	18	249	0.37	7.3	n.a.	18	0.027	0.66	0.73	n.a.
1	18	261	0.38	7.3	n.a.	18	0.028	0.67	0.73	n.a.
1	18	277	0.4	7.3	n.a.	18	0.03	0.68	0.73	n.a.
1	18	290	0.4	7.4	n.a.	18	0.031	0.69	0.74	n.a.
1	18	295	0.41	7.2	n.a.	18	0.032	0.69	0.72	n.a.
1	18	325	0.43	7.2	n.a.	18	0.035	0.71	0.72	n.a.
1	18	341	0.45	7.3	n.a.	18	0.037	0.72	0.73	n.a.
1	19	350	0.45	7.3	n.a.	19	0.038	0.72	0.73	n.a.
1	19	377	0.48	7.4	n.a.	19	0.041	0.74	0.74	n.a.
1	19	400	0.49	7.4	n.a.	19	0.043	0.74	0.74	n.a.
1	19	422	0.51	7.4	n.a.	19	0.045	0.75	0.74	n.a.
1	19	440	0.53	7.5	n.a.	19	0.047	0.76	0.75	n.a.
1	19	470	0.56	7.5	n.a.	19	0.051	0.77	0.75	n.a.
1	19	515	0.61	7.6	n.a.	19	0.056	0.79	0.76	n.a.
1	20	535	0.63	7.7	n.a.	20	0.058	0.8	0.77	n.a.
1	20	575	0.7	7.8	n.a.	20	0.062	0.82	0.78	n.a.
1	20	605	0.73	7.8	n.a.	20	0.065	0.82	0.78	n.a.
1	20	630	0.76	7.9	n.a.	20	0.068	0.83	0.79	n.a.
1	20	675	0.84	8.1	n.a.	20	0.073	0.85	0.81	n.a.
1	20	720	0.92	8.2	n.a.	20	0.078	0.86	0.82	n.a.
1	20	770	1.04	8.3	n.a.	20	0.083	0.87	0.83	n.a.
1	20	812	1.18	8.5	n.a.	20	0.088	0.89	0.85	n.a.
1	20	880	1.31	8.6	n.a.	20	0.095	0.9	0.86	n.a.

L-S Fluidisation experiment nr.: 29 Norit RB 4C

Material = GAC
D = 0.057
d10_ij = 4.62
Tavg = 26.9
pwet = 1500
mwet = 0.48
L0 = 0.33
Lmf = 0.33

Geldarts: D

dp,min

dp,max

A =

0.0025

[m²]

dp/D = 0.081

Off-set(ΔP) = 1.43

ΔPmax = 0.94

Vm (ε=0) = 0.32

Lm = 0.12

vmf = 74.4

ε0 = 0.61

εmf = 0.62

[-]

[mbar]

[kPa]

[L]

[m]

[m³/h]

[m³/m³]

[m³/m³]

Status bed	Temperature T	Water flow Qw	Bed height L	Pressure difference ΔP(399cm)		Temperature T (interp.)	Velocity vs	Voidage ε	Pressure difference ΔP	
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	27	0	0.33	1.5	n.a.	27	0	0.61	0.15	n.a.
0	27	17	0.33	0.2	n.a.	27	0.001	0.62	0.02	n.a.
0	26	25	0.33	0.4	n.a.	26	0.002	0.61	0.04	n.a.
0	26	60	0.33	1.3	n.a.	26	0.006	0.61	0.13	n.a.
0	26	85	0.33	2.2	n.a.	26	0.009	0.61	0.22	n.a.
0	27	111	0.33	3.2	n.a.	27	0.012	0.61	0.32	n.a.
0	27	141	0.33	4.5	n.a.	27	0.015	0.61	0.45	n.a.
0	27	166	0.32	5.9	n.a.	27	0.018	0.61	0.59	n.a.
1	27	191	0.33	7.1	n.a.	27	0.02	0.62	0.71	n.a.
1	27	224	0.35	6.7	n.a.	27	0.024	0.64	0.67	n.a.
1	27	245	0.36	6.7	n.a.	27	0.026	0.65	0.67	n.a.
1	27	275	0.38	6.9	n.a.	27	0.029	0.67	0.69	n.a.
1	27	290	0.39	6.9	n.a.	27	0.031	0.68	0.69	n.a.
1	27	342	0.43	7	n.a.	27	0.037	0.71	0.7	n.a.
1	27	360	0.44	7.1	n.a.	27	0.039	0.71	0.71	n.a.
1	27	402	0.47	7.2	n.a.	27	0.043	0.73	0.72	n.a.
1	27	415	0.49	7.3	n.a.	27	0.045	0.74	0.73	n.a.
1	27	465	0.55	7.5	n.a.	27	0.05	0.77	0.75	n.a.
1	27	585	0.68	7.7	n.a.	27	0.063	0.81	0.77	n.a.
1	27	632	0.74	7.8	n.a.	27	0.068	0.83	0.78	n.a.
1	27	664	0.81	8	n.a.	27	0.072	0.84	0.8	n.a.
1	27	690	0.87	8.1	n.a.	27	0.075	0.85	0.81	n.a.
1	27	747	0.97	8.3	n.a.	27	0.081	0.87	0.83	n.a.
1	27	799	1.09	8.4	n.a.	27	0.086	0.88	0.84	n.a.
1	26	840	1.17	8.6	n.a.	26	0.091	0.89	0.86	n.a.
1	27	888	1.29	8.8	n.a.	27	0.096	0.9	0.86	n.a.
1	27	917	1.38	8.9	n.a.	27	0.099	0.9	0.89	n.a.

1	27	946	1.5	9.1	n.a.	27	0.102	0.91	0.91	n.a.
1	27	990	1.65	9.2	n.a.	27	0.107	0.92	0.92	n.a.
1	27	1020	1.75	9.4	n.a.	27	0.111	0.92	0.94	n.a.
L-S Fluidisation experiment nr.: 30 Norit RB 4C						A =	0.0025	[m²]		
Material =	GAC	Geldarts: D				dp/D =	0.081	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	0.75	[mbar]		
d10_ij =	4.62	[mm]	4.05	5.28		ΔPmax =	0.99	[kPa]		
Tavg =	33.7	[°C]				Vm (ε=0) =	0.32	[L]		
pwet =	1500	[kg/m³]				Lm =	0.12	[m]		
mwet =	0.48	[kg]				vmf =	78.3	[m/h]		
L0 =	0.33	[m]				ε0 =	0.61	[m³/m³]		
Lmf =	0.33	[m]				εmf =	0.62	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	34	0	0.33	0.8	n.a.	34	0	0.61	0.08	n.a.
0	34	10	0.32	0.2	n.a.	34	0.001	0.61	0.02	n.a.
0	33	25	0.33	0.5	n.a.	33	0.002	0.61	0.05	n.a.
0	32	45	0.33	1	n.a.	32	0.004	0.61	0.1	n.a.
0	33	74	0.33	1.7	n.a.	33	0.008	0.61	0.17	n.a.
0	33	99	0.33	2.6	n.a.	33	0.01	0.61	0.26	n.a.
0	33	129	0.33	3.8	n.a.	33	0.014	0.61	0.38	n.a.
0	33	161	0.33	5.3	n.a.	33	0.017	0.61	0.53	n.a.
1	33	202	0.33	6.9	n.a.	33	0.021	0.62	0.69	n.a.
1	34	231	0.35	6.9	n.a.	34	0.025	0.64	0.69	n.a.
1	34	262	0.37	7	n.a.	34	0.028	0.66	0.7	n.a.
1	33	291	0.39	7.2	n.a.	33	0.031	0.67	0.72	n.a.
1	34	290	0.38	7	n.a.	34	0.031	0.67	0.7	n.a.
1	35	374	0.44	7.3	n.a.	35	0.04	0.71	0.73	n.a.
1	34	430	0.48	7.5	n.a.	34	0.046	0.74	0.75	n.a.
1	34	485	0.55	7.6	n.a.	34	0.052	0.77	0.76	n.a.
1	34	550	0.62	8.2	n.a.	34	0.059	0.79	0.82	n.a.
1	34	580	0.66	8.4	n.a.	34	0.063	0.8	0.84	n.a.
1	34	630	0.73	8.7	n.a.	34	0.068	0.82	0.87	n.a.
1	33	690	0.8	9	n.a.	33	0.075	0.84	0.9	n.a.
1	34	802	1.01	9.1	n.a.	34	0.087	0.87	0.91	n.a.
1	33	875	1.21	9.5	n.a.	33	0.095	0.89	0.95	n.a.
1	33	933	1.4	9.9	n.a.	33	0.101	0.91	0.99	n.a.
L-S Fluidisation experiment nr.: 31 Norit ROW 0.8 Supra						A =	0.0025	[m²]		
Material =	GAC	Geldarts: B				dp/D =	0.02	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	2.5	[mbar]		
d10_ij =	1.15	[mm]	0.84	1.56		ΔPmax =	0.57	[kPa]		
Tavg =	4.2	[°C]				Vm (ε=0) =	0.31	[L]		
pwet =	1450	[kg/m³]				Lm =	0.12	[m]		
mwet =	0.45	[kg]				vmf =	10.9	[m/h]		
L0 =	0.37	[m]				ε0 =	0.66	[m³/m³]		
Lmf =	0.4	[m]				εmf =	0.68	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	5	0	0.37	2.6	n.a.	5	0	0.66	0.26	n.a.
0	5	10	0.38	1.4	n.a.	5	0.001	0.67	0.14	n.a.
0	5	20	0.38	3.6	n.a.	5	0.002	0.67	0.36	n.a.
0	5	27	0.39	5.3	n.a.	5	0.002	0.68	0.53	n.a.
1	5	28	0.4	5.4	n.a.	5	0.003	0.69	0.54	n.a.
1	5	31	0.41	5.5	n.a.	5	0.003	0.69	0.55	n.a.
1	5	33	0.41	5.4	n.a.	5	0.003	0.7	0.54	n.a.
1	5	36	0.42	5.5	n.a.	5	0.003	0.7	0.55	n.a.
1	5	43	0.45	5.5	n.a.	5	0.004	0.72	0.55	n.a.
1	5	48	0.47	5.5	n.a.	5	0.005	0.73	0.55	n.a.
1	4	59	0.5	5.5	n.a.	4	0.006	0.75	0.55	n.a.
1	4	67	0.53	5.5	n.a.	4	0.007	0.76	0.55	n.a.
1	4	75	0.56	5.5	n.a.	4	0.008	0.77	0.55	n.a.
1	4	81	0.58	5.6	n.a.	4	0.008	0.78	0.56	n.a.
1	4	90	0.61	5.6	n.a.	4	0.009	0.79	0.56	n.a.
1	4	96	0.64	5.6	n.a.	4	0.01	0.8	0.56	n.a.
1	4	107	0.69	5.6	n.a.	4	0.011	0.82	0.56	n.a.
1	4	117	0.74	5.6	n.a.	4	0.012	0.83	0.56	n.a.
1	4	127	0.79	5.6	n.a.	4	0.013	0.84	0.56	n.a.
1	4	138	0.86	5.6	n.a.	4	0.015	0.85	0.56	n.a.
1	4	151	0.96	5.6	n.a.	4	0.016	0.87	0.56	n.a.
1	4	161	1.05	5.7	n.a.	4	0.017	0.88	0.57	n.a.
1	4	173	1.18	5.7	n.a.	4	0.018	0.89	0.57	n.a.
1	4	182	1.32	5.7	n.a.	4	0.019	0.9	0.57	n.a.
1	4	190	1.47	5.7	n.a.	4	0.02	0.91	0.57	n.a.
1	4	197	1.63	5.7	n.a.	4	0.021	0.92	0.57	n.a.
1	4	203	1.8	5.7	n.a.	4	0.022	0.93	0.57	n.a.
L-S Fluidisation experiment nr.: 32 Norit ROW 0.8 Supra						A =	0.0025	[m²]		
Material =	GAC	Geldarts: B				dp/D =	0.02	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	3	[mbar]		
d10_ij =	1.15	[mm]	0.84	1.56		ΔPmax =	0.57	[kPa]		
Tavg =	8.1	[°C]				Vm (ε=0) =	0.31	[L]		
pwet =	1450	[kg/m³]				Lm =	0.12	[m]		
mwet =	0.45	[kg]				vmf =	9.7	[m/h]		
L0 =	0.35	[m]				ε0 =	0.64	[m³/m³]		
Lmf =	0.36	[m]				εmf =	0.65	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	9	0	0.36	3.1	n.a.	9	0	0.65	0.31	n.a.
0	9	4	0.35	0.3	n.a.	9	0	0.64	0.03	n.a.
0	8	11	0.35	2	n.a.	8	0.001	0.64	0.2	n.a.
0	8	15	0.35	3	n.a.	8	0.001	0.64	0.3	n.a.
1	9	29	0.38	5	n.a.	9	0.003	0.67	0.5	n.a.
1	9	35	0.4	5	n.a.	9	0.003	0.69	0.5	n.a.
1	9	37	0.4	5	n.a.	9	0.004	0.69	0.5	n.a.
1	8	46	0.44	5.2	n.a.	8	0.005	0.71	0.52	n.a.
1	8	53	0.46	5.3	n.a.	8	0.005	0.73	0.53	n.a.
1	8	62	0.49	5.4	n.a.	8	0.006	0.74	0.54	n.a.
1	8	70	0.51	5.4	n.a.	8	0.007	0.76	0.54	n.a.
1	8	83	0.56	5.5	n.a.	8	0.009	0.77	0.55	n.a.
1	8	90	0.58	5.5	n.a.	8	0.009	0.78	0.55	n.a.
1	8	100	0.62	5.5	n.a.	8	0.01	0.8	0.55	n.a.
1	8	115	0.68	5.5	n.a.	8	0.012	0.81	0.55	n.a.
1	8	122	0.71	5.5	n.a.	8	0.013	0.82	0.55	n.a.
1	8	137	0.79	5.5	n.a.	8	0.014	0.84	0.55	n.a.
1	8	144	0.83	5.6	n.a.	8	0.015	0.85	0.56	n.a.
1	8	156	0.91	5.6	n.a.	8	0.017	0.86	0.56	n.a.
1	8	167	0.99	5.6	n.a.	8	0.018	0.87	0.56	n.a.
1	8	175	1.06	5.6	n.a.	8	0.019	0.88	0.56	n.a.
1	8	185	1.18	5.6	n.a.	8	0.02	0.89	0.56	n.a.
1	8	190	1.23	5.6	n.a.	8	0.02	0.89	0.56	n.a.
1	8	199	1.34	5.7	n.a.	8	0.021	0.9	0.57	n.a.
1	8	207	1.52	5.7	n.a.	8	0.022	0.91	0.57	n.a.
1	8	210	1.59	5.7	n.a.	8	0.022	0.92	0.57	n.a.
1	8	215	1.7	5.7	n.a.	8	0.023	0.92	0.57	n.a.
1	8	220	1.83	5.7	n.a.	8	0.023	0.93	0.57	n.a.
1	8	226	2.01	5.7	n.a.	8	0.024	0.93	0.57	n.a.
1	8	231	2.2	5.7	n.a.	8	0.025	0.94	0.57	n.a.
1	8	237	2.5	5.7	n.a.	8	0.025	0.95	0.57	n.a.

L-S Fluidisation experiment nr.: 33 Norit ROW 0.8 Supra

Material =	GAC	Geldarts: B		
D =	0.057	[m]	dp.min	dp.max
d10_ij =	1.15	[mm]	0.84	1.56
Tavg =	8.7	[°C]		
pwet =	1450	[kg/m³]		
mwet =	0.45	[kg]		
L0 =	0.34	[m]		
Lmf =	0.35	[m]		

A =

0.0025	[m²]
dp/D =	0.02
Off-set(ΔP) =	1.85
ΔPmax =	0.56
Vm (ε=0) =	0.31
Lm =	0.12
vmf =	9.8
ε0 =	0.63
εmf =	0.64

Status bed	Temperature T [°C]	Water flow Qw [L/h]	Bed height L [m]	Pressure difference ΔP(399cm) [mbar]	Hydrostatic [cm H2O]	Temperature T (interp.) [°C]	Velocity vs [m/s]	Voidage ε [m³/m³]	Pressure difference ΔP [kPa]	Hydrostatic [kPa]
[0/1/2/3]										
0	8.7	0	0.35	1.9	n.a.	8.7	0	0.64	0.19	n.a.
0	8.7	3	0.35	0.6	n.a.	8.7	0	0.64	0.06	n.a.
0	8.7	11	0.35	2.4	n.a.	8.7	0.001	0.64	0.24	n.a.
0	8.7	15	0.34	3.9	n.a.	8.7	0.001	0.64	0.39	n.a.
0	8.7	17	0.34	4.2	n.a.	8.7	0.001	0.64	0.42	n.a.
0	8.7	17	0.34	4.2	n.a.	8.7	0.001	0.64	0.42	n.a.
0	8.7	18	0.34	4.5	n.a.	8.7	0.001	0.64	0.45	n.a.
0	8.7	18	0.34	4.7	n.a.	8.7	0.001	0.64	0.47	n.a.
0	8.7	20	0.34	4.9	n.a.	8.7	0.002	0.64	0.49	n.a.
0	8.7	25	0.35	5.4	n.a.	8.7	0.002	0.65	0.54	n.a.
1	8.7	28	0.36	5.5	n.a.	8.7	0.003	0.65	0.55	n.a.
1	8.7	36	0.38	5.5	n.a.	8.7	0.003	0.67	0.55	n.a.
1	8.7	56	0.4	5.4	n.a.	8.7	0.006	0.69	0.54	n.a.
1	8.7	79	0.46	5.5	n.a.	8.7	0.008	0.73	0.55	n.a.
1	8.7	97	0.53	5.5	n.a.	8.7	0.01	0.76	0.55	n.a.
1	8.7	115	0.58	5.5	n.a.	8.7	0.012	0.78	0.55	n.a.
1	8.7	126	0.62	5.5	n.a.	8.7	0.013	0.8	0.55	n.a.
1	8.7	140	0.69	5.5	n.a.	8.7	0.015	0.82	0.55	n.a.
1	8.7	163	0.78	5.6	n.a.	8.7	0.017	0.84	0.56	n.a.
1	8.7	179	0.89	5.6	n.a.	8.7	0.019	0.86	0.56	n.a.
1	8.7	183	0.92	5.6	n.a.	8.7	0.019	0.86	0.56	n.a.
1	8.7	201	1.04	5.6	n.a.	8.7	0.021	0.88	0.56	n.a.
1	8.7	207	1.08	5.6	n.a.	8.7	0.022	0.88	0.56	n.a.
1	8.7	215	1.18	5.6	n.a.	8.7	0.023	0.89	0.56	n.a.
1	8.7	228	1.35	5.6	n.a.	8.7	0.024	0.9	0.56	n.a.
1	8.7	243	1.6	5.6	n.a.	8.7	0.026	0.92	0.56	n.a.
1	8.7	252	1.8	5.6	n.a.	8.7	0.027	0.93	0.56	n.a.

L-S Fluidisation experiment nr.: 34 Norit ROW 0.8 Supra

Material =	GAC	Geldarts: B		
D =	0.057	[m]	dp.min	dp.max
d10_ij =	1.15	[mm]	0.84	1.56
Tavg =	15	[°C]		
pwet =	1450	[kg/m³]		
mwet =	0.45	[kg]		
L0 =	0.36	[m]		
Lmf =	0.37	[m]		

A =

0.0025	[m²]
dp/D =	0.02
Off-set(ΔP) =	2.5
ΔPmax =	0.59
Vm (ε=0) =	0.31
Lm =	0.12
vmf =	10.8
ε0 =	0.65
εmf =	0.66

Status bed	Temperature T [°C]	Water flow Qw [L/h]	Bed height L [m]	Pressure difference ΔP(399cm) [mbar]	Hydrostatic [cm H2O]	Temperature T (interp.) [°C]	Velocity vs [m/s]	Voidage ε [m³/m³]	Pressure difference ΔP [kPa]	Hydrostatic [kPa]
[0/1/2/3]										
0	15	0	0.36	2.6	n.a.	15	0	0.65	0.26	n.a.
0	15	5	0.36	0.6	n.a.	15	0	0.65	0.06	n.a.
0	15	7	0.36	1	n.a.	15	0	0.65	0.1	n.a.
0	15	20	0.36	3.7	n.a.	15	0.002	0.65	0.37	n.a.
1	15	28	0.37	5.4	n.a.	15	0.003	0.66	0.54	n.a.
1	15	32	0.38	5.5	n.a.	15	0.003	0.67	0.55	n.a.
1	15	39	0.4	5.5	n.a.	15	0.004	0.69	0.55	n.a.
1	15	43	0.41	5.6	n.a.	15	0.004	0.7	0.56	n.a.
1	15	54	0.45	5.6	n.a.	15	0.005	0.72	0.56	n.a.
1	15	61	0.47	5.6	n.a.	15	0.006	0.73	0.56	n.a.
1	15	76	0.51	5.7	n.a.	15	0.008	0.75	0.57	n.a.
1	15	89	0.55	5.7	n.a.	15	0.009	0.77	0.57	n.a.
1	15	96	0.57	5.7	n.a.	15	0.01	0.78	0.57	n.a.
1	15	109	0.62	5.8	n.a.	15	0.011	0.8	0.58	n.a.
1	15	121	0.67	5.8	n.a.	15	0.013	0.81	0.58	n.a.
1	15	127	0.69	5.8	n.a.	15	0.013	0.82	0.58	n.a.
1	15	133	0.72	5.8	n.a.	15	0.014	0.82	0.58	n.a.
1	15	138	0.74	5.8	n.a.	15	0.015	0.83	0.58	n.a.
1	15	152	0.81	5.8	n.a.	15	0.016	0.84	0.58	n.a.
1	15	156	0.83	5.8	n.a.	15	0.016	0.85	0.58	n.a.
1	15	165	0.89	5.8	n.a.	15	0.018	0.86	0.58	n.a.
1	15	181	1.01	5.8	n.a.	15	0.019	0.87	0.58	n.a.
1	15	187	1.06	5.8	n.a.	15	0.02	0.88	0.58	n.a.
1	15	193	1.11	5.8	n.a.	15	0.021	0.88	0.58	n.a.
1	15	200	1.17	5.8	n.a.	15	0.021	0.89	0.58	n.a.
1	15	207	1.25	5.8	n.a.	15	0.022	0.9	0.58	n.a.
1	15	218	1.41	5.9	n.a.	15	0.023	0.91	0.59	n.a.
1	15	226	1.55	5.9	n.a.	15	0.024	0.91	0.59	n.a.
1	15	233	1.72	5.9	n.a.	15	0.025	0.92	0.59	n.a.
1	15	238	1.8	5.9	n.a.	15	0.025	0.93	0.59	n.a.
1	15	244	1.95	5.9	n.a.	15	0.026	0.93	0.59	n.a.
1	15	251	2.2	5.9	n.a.	15	0.027	0.94	0.59	n.a.
1	15	256	2.3	5.9	n.a.	15	0.027	0.94	0.59	n.a.

L-S Fluidisation experiment nr.: 35 Norit ROW 0.8 Supra

Material =	GAC	Geldarts: B		
D =	0.057	[m]	dp.min	dp.max
d10_ij =	1.15	[mm]	0.84	1.56
Tavg =	20.8	[°C]		
pwet =	1450	[kg/m³]		
mwet =	0.45	[kg]		
L0 =	0.35	[m]		
Lmf =	0.35	[m]		

A =

0.0025	[m²]
dp/D =	0.02
Off-set(ΔP) =	1.71
ΔPmax =	0.59
Vm (ε=0) =	0.31
Lm =	0.12
vmf =	11.7
ε0 =	0.64
εmf =	0.65

Status bed	Temperature T [°C]	Water flow Qw [L/h]	Bed height L [m]	Pressure difference ΔP(399cm) [mbar]	Hydrostatic [cm H2O]	Temperature T (interp.) [°C]	Velocity vs [m/s]	Voidage ε [m³/m³]	Pressure difference ΔP [kPa]	Hydrostatic [kPa]
[0/1/2/3]										
0	19.3	0	0.35	1.8	n.a.	19.3	0	0.64	0.18	n.a.
0	19.2	5	0.35	1.1	n.a.	19.2	0	0.64	0.11	n.a.
0	19.3	8	0.35	2	n.a.	19.3	0	0.64	0.2	n.a.
0	19.4	10	0.35	2.5	n.a.	19.4	0.001	0.64	0.25	n.a.
0	19.3	16	0.35	4	n.a.	19.3	0.001	0.64	0.4	n.a.
0	19.2	18	0.35	4.5	n.a.	19.2	0.001	0.64	0.45	n.a.
0	19.2	20	0.35	4.9	n.a.	19.2	0.002	0.64	0.49	n.a.
0	19.3	24	0.35	5.4	n.a.	19.3	0.002	0.65	0.54	n.a.
0	19.4	27	0.36	5.6	n.a.	19.4	0.002	0.65	0.56	n.a.
0	19.5	32	0.37	5.9	n.a.	19.5	0.003	0.67	0.59	n.a.
1	19.4	36	0.38	5.9	n.a.	19.4	0.003	0.67	0.59	n.a.
1	19.6	37	0.39	5.8	n.a.	19.6	0.004	0.68	0.58	n.a.
1	20.6	44	0.4	5.6	n.a.	20.6	0.004	0.69	0.56	n.a.
1	20.9	49	0.41	5.6	n.a.	20.9	0.005	0.7	0.56	n.a.
1	21	50	0.42	5.5	n.a.	21	0.005	0.7	0.55	n.a.
1	21.1	66	0.45	5.5	n.a.	21.1	0.007	0.72	0.55	n.a.
1	20.9	77	0.49	5.5	n.a.	20.9	0.008	0.74	0.55	n.a.
1	21	91	0.51	5.5	n.a.	21	0.009	0.76	0.55	n.a.
1	21	102	0.55	5.6	n.a.	21	0.011	0.77	0.56	n.a.
1	21	116	0.6	5.6	n.a.	21	0.012	0.79	0.56	n.a.
1	21	137	0.66	5.6	n.a.	21	0.014	0.81	0.56	n.a.
1	21	155	0.73	5.6	n.a.	21	0.016	0.83	0.56	n.a.
1	21	165	0.8	5.6	n.a.	21	0.017	0.84	0.56	n.a.
1	21	170	0.82	5.6	n.a.	21	0.018	0.84	0.56	n.a.

1	21	186	0.89	5.6	n.a.	21	0.02	0.86	0.56	n.a.
1	21	200	1.02	5.6	n.a.	21	0.021	0.87	0.56	n.a.
1	21	212	1.13	5.6	n.a.	21	0.023	0.89	0.56	n.a.
1	21	247	1.45	5.6	n.a.	21	0.026	0.91	0.56	n.a.
L-S Fluidisation experiment nr.: 36 Norit ROW 0.8 Supra						A =	0.0025	[m²]		
Material =	GAC	Geldarts: B				dp/D =	0.02	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	2.25	[mbar]		
d10_ij =	1.15	[mm]	0.84	1.56		ΔPmax =	0.58	[kPa]		
Tavg =	24	[°C]				Vm (ε=0) =	0.31	[L]		
pwet =	1450	[kg/m³]				Lm =	0.12	[m]		
mwet =	0.45	[kg]				vmf =	13.7	[m/h]		
L0 =	0.35	[m]				ε0 =	0.64	[m³/m³]		
Lmf =	0.37	[m]				εmf =	0.66	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	23	0	0.36	2.3	n.a.	23	0	0.65	0.23	n.a.
0	24	18	0.35	3.5	n.a.	24	0.001	0.64	0.35	n.a.
0	24	28	0.36	4.9	n.a.	24	0.003	0.66	0.49	n.a.
0	24	32	0.37	5.6	n.a.	24	0.003	0.66	0.56	n.a.
1	24	41	0.39	5.4	n.a.	24	0.004	0.68	0.54	n.a.
1	24	52	0.42	5.4	n.a.	24	0.005	0.7	0.54	n.a.
1	24	57	0.43	5.4	n.a.	24	0.006	0.71	0.54	n.a.
1	24	64	0.45	5.4	n.a.	24	0.007	0.72	0.54	n.a.
1	24	73	0.47	5.5	n.a.	24	0.008	0.74	0.55	n.a.
1	24	87	0.51	5.5	n.a.	24	0.009	0.75	0.55	n.a.
1	24	95	0.53	5.5	n.a.	24	0.01	0.76	0.55	n.a.
1	24	104	0.56	5.5	n.a.	24	0.011	0.78	0.55	n.a.
1	24	123	0.62	5.6	n.a.	24	0.013	0.8	0.56	n.a.
1	24	133	0.66	5.6	n.a.	24	0.014	0.81	0.56	n.a.
1	24	145	0.71	5.6	n.a.	24	0.015	0.82	0.56	n.a.
1	24	155	0.75	5.6	n.a.	24	0.016	0.83	0.56	n.a.
1	24	170	0.82	5.6	n.a.	24	0.018	0.85	0.56	n.a.
1	24	182	0.9	5.6	n.a.	24	0.019	0.86	0.56	n.a.
1	24	190	0.95	5.7	n.a.	24	0.02	0.86	0.57	n.a.
1	24	194	0.98	5.7	n.a.	24	0.021	0.87	0.57	n.a.
1	24	206	1.08	5.7	n.a.	24	0.022	0.88	0.57	n.a.
1	24	215	1.17	5.7	n.a.	24	0.023	0.89	0.57	n.a.
1	24	223	1.21	5.7	n.a.	24	0.024	0.89	0.57	n.a.
1	24	233	1.37	5.7	n.a.	24	0.025	0.9	0.57	n.a.
1	24	239	1.47	5.7	n.a.	24	0.026	0.91	0.57	n.a.
1	24	247	1.58	5.7	n.a.	24	0.026	0.92	0.57	n.a.
1	24	255	1.72	5.8	n.a.	24	0.027	0.92	0.58	n.a.
1	24	262	1.88	5.8	n.a.	24	0.028	0.93	0.58	n.a.
1	24	276	2.15	5.8	n.a.	24	0.03	0.94	0.58	n.a.
1	24	280	2.3	5.8	n.a.	24	0.03	0.94	0.58	n.a.
L-S Fluidisation experiment nr.: 37 Norit ROW 0.8 Supra						A =	0.0025	[m²]		
Material =	GAC	Geldarts: B				dp/D =	0.02	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	1.1	[mbar]		
d10_ij =	1.15	[mm]	0.84	1.56		ΔPmax =	0.58	[kPa]		
Tavg =	26.6	[°C]				Vm (ε=0) =	0.31	[L]		
pwet =	1450	[kg/m³]				Lm =	0.12	[m]		
mwet =	0.45	[kg]				vmf =	13.7	[m/h]		
L0 =	0.35	[m]				ε0 =	0.64	[m³/m³]		
Lmf =	0.35	[m]				εmf =	0.65	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	30	0	0.37	1.1	n.a.	30	0	0.66	0.11	n.a.
0	25	0	0.37	0	n.a.	25	0	0.66	0	n.a.
0	29.2	2	0.36	0	n.a.	29.2	0	0.66	0	n.a.
0	28.6	6	0.36	0.8	n.a.	28.6	0	0.66	0.08	n.a.
0	30.6	9	0.36	1.4	n.a.	30.6	0	0.66	0.14	n.a.
0	30.2	12	0.36	2.1	n.a.	30.2	0.001	0.65	0.21	n.a.
0	28.5	20	0.36	3.6	n.a.	28.5	0.002	0.66	0.36	n.a.
0	28	25	0.37	4.9	n.a.	28	0.002	0.66	0.49	n.a.
0	28	35	0.37	5.4	n.a.	28	0.003	0.67	0.54	n.a.
1	31	44	0.39	5.6	n.a.	31	0.004	0.68	0.56	n.a.
1	30	59	0.42	5.4	n.a.	30	0.006	0.7	0.54	n.a.
1	29	78	0.46	5.4	n.a.	29	0.008	0.73	0.54	n.a.
1	26	92	0.49	5.8	n.a.	26	0.01	0.74	0.58	n.a.
1	28	93	0.51	5.5	n.a.	28	0.01	0.75	0.55	n.a.
1	26	100	0.52	5.8	n.a.	26	0.01	0.76	0.58	n.a.
1	26	114	0.53	5.8	n.a.	26	0.012	0.76	0.58	n.a.
1	27	119	0.57	5.6	n.a.	27	0.012	0.78	0.56	n.a.
1	26	121	0.56	5.8	n.a.	26	0.013	0.78	0.58	n.a.
1	27	133	0.6	5.7	n.a.	27	0.014	0.79	0.57	n.a.
1	26	136	0.62	5.8	n.a.	26	0.014	0.79	0.58	n.a.
1	26	142	0.65	5.8	n.a.	26	0.015	0.8	0.58	n.a.
1	27	145	0.65	5.7	n.a.	27	0.015	0.8	0.57	n.a.
1	26	150	0.67	5.8	n.a.	26	0.016	0.81	0.58	n.a.
1	26	154	0.67	5.7	n.a.	26	0.016	0.81	0.57	n.a.
1	27	156	0.69	5.7	n.a.	27	0.016	0.82	0.57	n.a.
1	26	166	0.74	5.7	n.a.	26	0.018	0.83	0.57	n.a.
1	26	172	0.74	5.8	n.a.	26	0.018	0.83	0.58	n.a.
1	26	173	0.78	5.8	n.a.	26	0.018	0.84	0.58	n.a.
1	26	186	0.84	5.8	n.a.	26	0.02	0.85	0.58	n.a.
1	26	196	0.9	5.8	n.a.	26	0.021	0.86	0.58	n.a.
1	26	199	0.93	5.8	n.a.	26	0.021	0.86	0.58	n.a.
1	26	208	0.99	5.8	n.a.	26	0.022	0.87	0.58	n.a.
1	26	212	1.01	5.8	n.a.	26	0.023	0.87	0.58	n.a.
1	26	217	1.05	5.8	n.a.	26	0.023	0.88	0.58	n.a.
1	25	217	1.06	5.8	n.a.	25	0.023	0.88	0.58	n.a.
1	26	237	1.25	5.8	n.a.	26	0.025	0.9	0.58	n.a.
L-S Fluidisation experiment nr.: 38 Norit ROW 0.8 Supra						A =	0.0025	[m²]		
Material =	GAC	Geldarts: B				dp/D =	0.02	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	0.75	[mbar]		
d10_ij =	1.15	[mm]	0.84	1.56		ΔPmax =	0.6	[kPa]		
Tavg =	38.8	[°C]				Vm (ε=0) =	0.31	[L]		
pwet =	1450	[kg/m³]				Lm =	0.12	[m]		
mwet =	0.45	[kg]				vmf =	15	[m/h]		
L0 =	0.35	[m]				ε0 =	0.64	[m³/m³]		
Lmf =	0.36	[m]				εmf =	0.66	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	38	0	0.36	0.7	n.a.	38	0	0.65	0.07	n.a.
0	37	2	0.35	0.3	n.a.	37	0	0.64	0.03	n.a.
0	37	12	0.35	1.8	n.a.	37	0.001	0.64	0.18	n.a.
0	37	20	0.34	3.4	n.a.	37	0.002	0.64	0.34	n.a.
0	37	27	0.36	4.3	n.a.	37	0.002	0.65	0.43	n.a.
0	37	32	0.36	4.8	n.a.	37	0.003	0.65	0.48	n.a.
0	38	35	0.36	5.2	n.a.	38	0.003	0.65	0.52	n.a.
1	38	39	0.36	5.3	n.a.	38	0.004	0.66	0.53	n.a.
1	38	45	0.37	5.4	n.a.	38	0.004	0.67	0.54	n.a.
1	38	52	0.39	5.4	n.a.	38	0.005	0.68	0.54	n.a.
1	39	63	0.41	5.5	n.a.	39	0.006	0.7	0.55	n.a.
1	39	73	0.43	5.5	n.a.	39	0.007	0.71	0.55	n.a.
1	39	84	0.46	5.5	n.a.	39	0.009	0.73	0.55	n.a.
1	39	94	0.48	5.5	n.a.	39	0.01	0.74	0.55	n.a.

1	39	107	0.51	5.5	n.a.	39	0.011	0.75	0.55	n.a.
1	39	118	0.54	5.5	n.a.	39	0.012	0.77	0.55	n.a.
1	39	129	0.57	5.5	n.a.	39	0.014	0.78	0.55	n.a.
1	39	137	0.59	5.5	n.a.	39	0.014	0.79	0.55	n.a.
1	39	146	0.62	5.5	n.a.	39	0.015	0.8	0.55	n.a.
1	39	156	0.65	5.5	n.a.	39	0.016	0.81	0.55	n.a.
1	39	168	0.7	5.5	n.a.	39	0.018	0.82	0.55	n.a.
1	39	183	0.77	5.6	n.a.	39	0.02	0.83	0.56	n.a.
1	39	193	0.82	5.6	n.a.	39	0.021	0.84	0.56	n.a.
1	39	205	0.88	5.6	n.a.	39	0.022	0.85	0.56	n.a.
1	39	214	0.93	5.6	n.a.	39	0.023	0.86	0.56	n.a.
1	39	220	0.97	5.7	n.a.	39	0.023	0.87	0.57	n.a.
1	39	231	1.05	5.7	n.a.	39	0.025	0.88	0.57	n.a.
1	39	244	1.16	5.7	n.a.	39	0.026	0.89	0.57	n.a.
1	39	253	1.27	5.7	n.a.	39	0.027	0.9	0.57	n.a.
1	39	265	1.41	5.8	n.a.	39	0.028	0.91	0.58	n.a.
1	39	276	1.56	5.9	n.a.	39	0.03	0.92	0.59	n.a.
1	39	283	1.75	6	n.a.	39	0.03	0.92	0.6	n.a.
L-S Fluidisation experiment nr.: 39 Resorb HC						A =				
Material =		GAC	Geldarts: B			dp/D =		0.0025	[m ²]	
D =		0.057	[m]	dp.min	dp.max	Off-set(ΔP) = 2.5		0.026	[-]	
d10_ij =		1.51	[mm]	1.25	1.82	ΔPmax =		0.68	[kPa]	
Tavg =		4.1	[°C]			Vm (ε=0) =		0.46	[L]	
pwet =		1359	[kg/m ³]			Lm =		0.18	[m]	
mwet =		0.63	[kg]			vmf =		24.1	[m/h]	
L0 =		0.35	[m]			ε0 =		0.49	[m ³ /m ³]	
Lmf =		0.41	[m]			εmf =		0.56	[m ³ /m ³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m ³ /m ³]	[kPa]	[kPa]
0	5	0	0.35	2.6	n.a.	5	0	0.49	0.26	n.a.
0	5.5	15	0.36	1.9	n.a.	5.5	0.001	0.5	0.19	n.a.
0	6	26	0.36	4.1	n.a.	6	0.002	0.5	0.41	n.a.
0	6	27	0.36	4.2	n.a.	6	0.003	0.5	0.42	n.a.
0	5	30	0.36	4.6	n.a.	5	0.003	0.5	0.46	n.a.
0	5	33	0.37	4.9	n.a.	5	0.003	0.51	0.49	n.a.
0	5	38	0.37	5.3	n.a.	5	0.004	0.51	0.53	n.a.
0	5	42	0.38	5.6	n.a.	5	0.004	0.52	0.56	n.a.
0	5	49	0.39	6	n.a.	5	0.005	0.53	0.6	n.a.
0	5	52	0.39	6.1	n.a.	5	0.005	0.54	0.61	n.a.
0	5	55	0.4	6.3	n.a.	5	0.006	0.55	0.63	n.a.
0	4	61	0.41	6.5	n.a.	4	0.006	0.56	0.65	n.a.
1	4	66	0.42	6.5	n.a.	4	0.007	0.57	0.65	n.a.
1	4	74	0.44	6.5	n.a.	4	0.008	0.58	0.65	n.a.
1	4	85	0.47	6.5	n.a.	4	0.009	0.61	0.65	n.a.
1	4	91	0.48	6.6	n.a.	4	0.009	0.62	0.66	n.a.
1	4	105	0.52	6.6	n.a.	4	0.011	0.65	0.66	n.a.
1	4	113	0.54	6.6	n.a.	4	0.012	0.66	0.66	n.a.
1	4	122	0.57	6.6	n.a.	4	0.013	0.68	0.66	n.a.
1	4	134	0.6	6.6	n.a.	4	0.014	0.7	0.66	n.a.
1	4	144	0.64	6.6	n.a.	4	0.015	0.71	0.66	n.a.
1	4	157	0.7	6.7	n.a.	4	0.017	0.74	0.67	n.a.
1	5	167	0.76	6.7	n.a.	5	0.018	0.76	0.67	n.a.
1	4	178	0.84	6.7	n.a.	4	0.019	0.78	0.67	n.a.
1	4	195	1.04	6.7	n.a.	4	0.021	0.82	0.67	n.a.
1	5	204	1.19	6.7	n.a.	5	0.022	0.84	0.67	n.a.
1	4	214	1.3	6.7	n.a.	4	0.023	0.86	0.67	n.a.
1	4	228	1.55	6.8	n.a.	4	0.024	0.88	0.68	n.a.
1	4	238	1.77	6.8	n.a.	4	0.025	0.89	0.68	n.a.
L-S Fluidisation experiment nr.: 40 Resorb HC						A =				
Material =		GAC	Geldarts: B			dp/D =		0.0025	[m ²]	
D =		0.057	[m]	dp.min	dp.max	Off-set(ΔP) = 2.75		0.026	[-]	
d10_ij =		1.51	[mm]	1.25	1.82	ΔPmax =		0.68	[kPa]	
Tavg =		10.6	[°C]			Vm (ε=0) =		0.46	[L]	
pwet =		1359	[kg/m ³]			Lm =		0.18	[m]	
mwet =		0.63	[kg]			vmf =		16.4	[m/h]	
L0 =		0.34	[m]			ε0 =		0.47	[m ³ /m ³]	
Lmf =		0.35	[m]			εmf =		0.48	[m ³ /m ³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m ³ /m ³]	[kPa]	[kPa]
0	11	0	0.34	2.9	n.a.	11	0	0.47	0.29	n.a.
0	11	15	0.34	1.8	n.a.	11	0.001	0.47	0.18	n.a.
0	11	26	0.34	4.4	n.a.	11	0.002	0.47	0.44	n.a.
0	11	34	0.34	5.4	n.a.	11	0.003	0.47	0.54	n.a.
0	11	38	0.34	6.1	n.a.	11	0.004	0.47	0.61	n.a.
0	11	42	0.35	6.4	n.a.	11	0.004	0.48	0.64	n.a.
1	11	52	0.37	6.4	n.a.	11	0.005	0.51	0.64	n.a.
1	11	62	0.38	6.3	n.a.	11	0.006	0.53	0.63	n.a.
1	11	70	0.4	6.3	n.a.	11	0.007	0.55	0.63	n.a.
1	11	81	0.43	6.4	n.a.	11	0.008	0.57	0.64	n.a.
1	11	92	0.45	6.5	n.a.	11	0.01	0.6	0.65	n.a.
1	11	100	0.47	6.5	n.a.	11	0.01	0.61	0.65	n.a.
1	11	108	0.49	6.5	n.a.	11	0.011	0.63	0.65	n.a.
1	11	123	0.53	6.5	n.a.	11	0.013	0.66	0.65	n.a.
1	11	132	0.55	6.5	n.a.	11	0.014	0.67	0.65	n.a.
1	11	140	0.58	6.6	n.a.	11	0.015	0.68	0.66	n.a.
1	11	150	0.61	6.6	n.a.	11	0.016	0.7	0.66	n.a.
1	11	160	0.65	6.6	n.a.	11	0.017	0.72	0.66	n.a.
1	11	172	0.71	6.6	n.a.	11	0.018	0.74	0.66	n.a.
1	10	179	0.75	6.7	n.a.	10	0.019	0.75	0.67	n.a.
1	10	193	0.84	6.7	n.a.	10	0.021	0.78	0.67	n.a.
1	10	205	0.95	6.7	n.a.	10	0.022	0.8	0.67	n.a.
1	10	215	1.04	6.7	n.a.	10	0.023	0.82	0.67	n.a.
1	10	222	1.14	6.7	n.a.	10	0.024	0.84	0.67	n.a.
1	10	234	1.33	6.7	n.a.	10	0.025	0.86	0.67	n.a.
1	10	245	1.49	6.8	n.a.	10	0.026	0.87	0.68	n.a.
1	10	250	1.55	6.8	n.a.	10	0.027	0.88	0.68	n.a.
L-S Fluidisation experiment nr.: 41 Resorb HC						A =				
Material =		GAC	Geldarts: B			dp/D =		0.0025	[m ²]	
D =		0.057	[m]	dp.min	dp.max	Off-set(ΔP) = 2.75		0.026	[-]	
d10_ij =		1.51	[mm]	1.25	1.82	ΔPmax =		0.68	[kPa]	
Tavg =		14.3	[°C]			Vm (ε=0) =		0.46	[L]	
pwet =		1359	[kg/m ³]			Lm =		0.18	[m]	
mwet =		0.63	[kg]			vmf =		15.8	[m/h]	
L0 =		0.34	[m]			ε0 =		0.47	[m ³ /m ³]	
Lmf =		0.34	[m]			εmf =		0.47	[m ³ /m ³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m ³ /m ³]	[kPa]	[kPa]
0	14	0	0.34	2.9	n.a.	14	0	0.47	0.29	n.a.
0	14	15	0.34	1.5	n.a.	14	0.001	0.46	0.15	n.a.
0	14	26	0.34	3.9	n.a.	14	0.002	0.46	0.39	n.a.
0	14	29	0.33	4.6	n.a.	14	0.003	0.46	0.46	n.a.
0	14	31	0.33	5.1	n.a.	14	0.003	0.46	0.51	n.a.
0	14	35	0.34	5.4	n.a.	14	0.003	0.47	0.54	n.a.
0	14	40	0.34	6.4	n.a.	14	0.004	0.47	0.64	n.a.
1	14	45	0.35	6.5	n.a.	14	0.004	0.48	0.65	n.a.
1	14	53	0.36	6.5	n.a.	14	0.005	0.5	0.65	n.a.
1	14	58	0.37	6.4	n.a.	14	0.006	0.52	0.64	n.a.

1	14	66	0.39	6.4	n.a.	14	0.007	0.54	0.64	n.a.
1	14	75	0.41	6.5	n.a.	14	0.008	0.55	0.65	n.a.
1	14	93	0.44	6.4	n.a.	14	0.01	0.59	0.64	n.a.
1	14	99	0.46	6.5	n.a.	14	0.01	0.6	0.65	n.a.
1	14	104	0.47	6.5	n.a.	14	0.011	0.61	0.65	n.a.
1	14	113	0.49	6.6	n.a.	14	0.012	0.63	0.66	n.a.
1	14	121	0.51	6.6	n.a.	14	0.013	0.64	0.66	n.a.
1	14	130	0.53	6.6	n.a.	14	0.014	0.66	0.66	n.a.
1	14	137	0.55	6.6	n.a.	14	0.015	0.67	0.66	n.a.
1	14	143	0.56	6.6	n.a.	14	0.015	0.68	0.66	n.a.
1	14	151	0.59	6.6	n.a.	14	0.016	0.69	0.66	n.a.
1	14	157	0.61	6.7	n.a.	14	0.017	0.7	0.67	n.a.
1	14	164	0.63	6.7	n.a.	14	0.017	0.71	0.67	n.a.
1	14	176	0.68	6.7	n.a.	14	0.019	0.73	0.67	n.a.
1	15	187	0.72	6.7	n.a.	15	0.02	0.74	0.67	n.a.
1	15	197	0.79	6.7	n.a.	15	0.021	0.77	0.67	n.a.
1	15	200	0.82	6.7	n.a.	15	0.023	0.79	0.67	n.a.
1	15	212	0.9	6.7	n.a.	15	0.023	0.8	0.68	n.a.
1	15	218	0.95	6.8	n.a.	15	0.023	0.8	0.68	n.a.
1	15	222	1	6.8	n.a.	15	0.024	0.81	0.68	n.a.
1	15	227	1.02	6.8	n.a.	15	0.024	0.82	0.68	n.a.
1	15	232	1.08	6.8	n.a.	15	0.025	0.83	0.68	n.a.
1	15	240	1.16	6.8	n.a.	15	0.026	0.84	0.68	n.a.
1	15	253	1.32	6.8	n.a.	15	0.027	0.86	0.68	n.a.
L-S Fluidisation experiment nr.: 42 Resorb HC						A =				
Material =	GAC	Geldarts: B				dp/D =	0.0025	[m ²]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	2.25	[mbar]		
d10_ij =	1.51	[mm]	1.25	1.82		ΔPmax =	0.67	[kPa]		
Tavg =	20	[°C]				Vm (ε=0) =	0.46	[L]		
pwet =	1359	[kg/m ³]				Lm =	0.18	[m]		
mwet =	0.63	[kg]				vmf =	21.6	[m/h]		
L0 =	0.35	[m]				ε0 =	0.48	[m ³ /m ³]		
Lmf =	0.36	[m]				εmf =	0.5	[m ³ /m ³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m ³ /m ³]	[kPa]	[kPa]
0	20	0	0.35	2.3	n.a.	20	0	0.48	0.23	n.a.
0	20	15	0.35	1.6	n.a.	20	0.001	0.48	0.16	n.a.
0	20	26	0.35	3.1	n.a.	20	0.002	0.48	0.31	n.a.
0	20	31	0.35	3.7	n.a.	20	0.003	0.49	0.37	n.a.
0	20	34	0.35	4	n.a.	20	0.003	0.49	0.4	n.a.
0	20	41	0.36	4.8	n.a.	20	0.004	0.49	0.48	n.a.
0	20	43	0.36	5.2	n.a.	20	0.004	0.49	0.52	n.a.
0	20	47	0.36	5.6	n.a.	20	0.005	0.5	0.56	n.a.
0	20	50	0.36	6	n.a.	20	0.005	0.5	0.6	n.a.
0	20	55	0.36	6.4	n.a.	20	0.006	0.5	0.64	n.a.
1	20	61	0.37	6.4	n.a.	20	0.006	0.51	0.64	n.a.
1	20	65	0.38	6.4	n.a.	20	0.007	0.52	0.64	n.a.
1	20	73	0.39	6.4	n.a.	20	0.007	0.54	0.64	n.a.
1	20	79	0.4	6.5	n.a.	20	0.008	0.55	0.65	n.a.
1	20	86	0.41	6.5	n.a.	20	0.009	0.56	0.65	n.a.
1	20	92	0.43	6.5	n.a.	20	0.01	0.57	0.65	n.a.
1	20	99	0.44	6.5	n.a.	20	0.01	0.59	0.65	n.a.
1	20	107	0.46	6.5	n.a.	20	0.011	0.6	0.65	n.a.
1	20	114	0.47	6.5	n.a.	20	0.012	0.61	0.65	n.a.
1	20	120	0.49	6.5	n.a.	20	0.013	0.62	0.65	n.a.
1	20	125	0.5	6.5	n.a.	20	0.013	0.63	0.65	n.a.
1	20	135	0.52	6.5	n.a.	20	0.014	0.65	0.65	n.a.
1	20	143	0.54	6.6	n.a.	20	0.015	0.66	0.66	n.a.
1	20	154	0.57	6.6	n.a.	20	0.016	0.66	0.66	n.a.
1	20	163	0.6	6.6	n.a.	20	0.017	0.69	0.66	n.a.
1	20	172	0.63	6.6	n.a.	20	0.018	0.71	0.66	n.a.
1	20	177	0.65	6.6	n.a.	20	0.019	0.72	0.66	n.a.
1	20	191	0.71	6.6	n.a.	20	0.02	0.74	0.66	n.a.
1	20	200	0.75	6.6	n.a.	20	0.021	0.76	0.66	n.a.
1	20	206	0.8	6.6	n.a.	20	0.022	0.77	0.66	n.a.
1	20	214	0.85	6.7	n.a.	20	0.023	0.78	0.67	n.a.
1	20	221	0.91	6.7	n.a.	20	0.024	0.8	0.67	n.a.
1	20	227	0.95	6.7	n.a.	20	0.024	0.8	0.67	n.a.
1	20	236	1.04	6.7	n.a.	20	0.025	0.82	0.67	n.a.
1	20	242	1.11	6.7	n.a.	20	0.026	0.83	0.67	n.a.
1	20	249	1.18	6.7	n.a.	20	0.027	0.84	0.67	n.a.
L-S Fluidisation experiment nr.: 43 Resorb HC						A =				
Material =	GAC	Geldarts: B				dp/D =	0.0025	[m ²]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	2	[mbar]		
d10_ij =	1.51	[mm]	1.25	1.82		ΔPmax =	0.64	[kPa]		
Tavg =	27	[°C]				Vm (ε=0) =	0.46	[L]		
pwet =	1359	[kg/m ³]				Lm =	0.18	[m]		
mwet =	0.63	[kg]				vmf =	26.6	[m/h]		
L0 =	0.35	[m]				ε0 =	0.48	[m ³ /m ³]		
Lmf =	0.37	[m]				εmf =	0.51	[m ³ /m ³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m ³ /m ³]	[kPa]	[kPa]
0	27	0	0.34	2.1	n.a.	27	0	0.46	0.21	n.a.
0	27	15	0.34	1	n.a.	27	0.001	0.46	0.1	n.a.
0	27	25	0.34	2.9	n.a.	27	0.002	0.46	0.29	n.a.
0	27	29	0.34	3.6	n.a.	27	0.003	0.47	0.36	n.a.
0	27	35	0.34	4.1	n.a.	27	0.003	0.47	0.41	n.a.
0	27	43	0.35	4.8	n.a.	27	0.004	0.48	0.48	n.a.
0	27	50	0.35	5.4	n.a.	27	0.005	0.49	0.54	n.a.
0	27	59	0.36	6.1	n.a.	27	0.006	0.5	0.61	n.a.
0	27	67	0.37	6.1	n.a.	27	0.007	0.51	0.61	n.a.
1	27	73	0.38	6.2	n.a.	27	0.007	0.53	0.62	n.a.
1	27	79	0.39	6.2	n.a.	27	0.008	0.54	0.62	n.a.
1	27	86	0.4	6.2	n.a.	27	0.009	0.55	0.62	n.a.
1	27	93	0.42	6.2	n.a.	27	0.01	0.57	0.62	n.a.
1	27	98	0.42	6.2	n.a.	27	0.01	0.57	0.62	n.a.
1	27	105	0.44	6.3	n.a.	27	0.011	0.58	0.63	n.a.
1	27	113	0.45	6.3	n.a.	27	0.012	0.6	0.63	n.a.
1	27	122	0.47	6.3	n.a.	27	0.013	0.61	0.63	n.a.
1	27	128	0.49	6.3	n.a.	27	0.013	0.62	0.63	n.a.
1	27	133	0.5	6.3	n.a.	27	0.014	0.63	0.63	n.a.
1	27	141	0.52	6.3	n.a.	27	0.015	0.65	0.63	n.a.
1	27	150	0.54	6.3	n.a.	27	0.016	0.66	0.63	n.a.
1	27	159	0.56	6.3	n.a.	27	0.017	0.67	0.63	n.a.
1	27	166	0.58	6.3	n.a.	27	0.018	0.69	0.63	n.a.
1	27	176	0.61	6.4	n.a.	27	0.019	0.7	0.64	n.a.
1	27	185	0.65	6.4	n.a.	27	0.02	0.72	0.64	n.a.
1	27	195	0.69	6.4	n.a.	27	0.021	0.73	0.64	n.a.
1	27	202	0.71	6.4	n.a.	27	0.022	0.74	0.64	n.a.
1	27	212	0.76	6.4	n.a.	27	0.023	0.76	0.64	n.a.
1	27	218	0.8	6.4	n.a.	27	0.023	0.77	0.64	n.a.
1	27	227	0.85	6.4	n.a.	27	0.024	0.78	0.64	n.a.
1	27	232	0.89	6.4	n.a.	27	0.025	0.79	0.64	n.a.
1	27	241	0.97	6.4	n.a.	27	0.026	0.81	0.64	n.a.
1	27	250	1.06	6.4	n.a.	27	0.027	0.82	0.64	n.a.
1	27	260	1.16	6.4	n.a.	27	0.028	0.84	0.64	n.a.
1	27	272	1.3	6.4	n.a.	27	0.029	0.86	0.64	n.a.
1	27	280	1.4	6.4	n.a.	27	0.03	0.87	0.64	n.a.
1	27	291	1.55	6.4	n.a.	27	0.031	0.88	0.64	n.a.

L-S Fluidisation experiment nr.: 44 Saratech Spherical						A =	0.0025	[m²]	
Material =	GAC	Geldarts: A					dp/D =	0.007	[-]
D =	0.057	[m]	dp,min	dp,max			Off-set(ΔP) = 2.5	[mbar]	
d10_ij =	0.4	[mm]					ΔPmax =	0.76	[kPa]
Tavg =	5	[°C]					Vm (ε=0) =	0.48	[L]
pwet =	1388	[kg/m³]					Lm =	0.18	[m]
mwet =	0.66	[kg]					vmf =	3.9	[m/h]
L0 =	0.35	[m]					ε0 =	0.46	[m³/m³]
Lmf =	0.4	[m]					εmf =	0.52	[m³/m³]
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]
[0/1/2/3]									
0	6	0	0.35	2.6	n.a.	6	0	0.46	0.26
0	6	5	0.35	2.6	n.a.	6	0	0.46	0.26
0	6	9	0.35	7.2	n.a.	6	0.001	0.46	0.72
1	6	28	0.61	7.3	n.a.	6	0.003	0.69	0.73
1	5.5	31	0.65	7.4	n.a.	5.5	0.003	0.71	0.74
1	5	34	0.69	7.4	n.a.	5	0.003	0.72	0.74
1	5	38	0.74	7.4	n.a.	5	0.004	0.74	0.74
1	5	39	0.75	7.4	n.a.	5	0.004	0.75	0.74
1	5	41	0.77	7.4	n.a.	5	0.004	0.75	0.74
1	5	42	0.79	7.4	n.a.	5	0.004	0.76	0.74
1	5	45	0.83	7.4	n.a.	5	0.004	0.77	0.74
1	5	49	0.91	7.5	n.a.	5	0.005	0.79	0.75
1	5	54	0.99	7.5	n.a.	5	0.005	0.81	0.75
1	5	59	1.1	7.5	n.a.	5	0.006	0.82	0.75
1	5	64	1.21	7.5	n.a.	5	0.006	0.84	0.75
1	5	67	1.34	7.5	n.a.	5	0.007	0.85	0.75
1	5	70	1.42	7.5	n.a.	5	0.007	0.86	0.75
1	5	75	1.63	7.5	n.a.	5	0.008	0.88	0.75
1	5	79	1.83	7.5	n.a.	5	0.008	0.89	0.75
1	5	82	2	7.6	n.a.	5	0.008	0.9	0.76
1	5	84	2.18	7.5	n.a.	5	0.009	0.91	0.75
1	5	86	2.38	7.5	n.a.	5	0.009	0.92	0.75
1	5	94	3.2	7.6	n.a.	5	0.01	0.94	0.76
L-S Fluidisation experiment nr.: 45 Saratech Spherical						A =	0.0025	[m²]	
Material =	GAC	Geldarts: A					dp/D =	0.007	[-]
D =	0.057	[m]	dp,min	dp,max			Off-set(ΔP) = 2.5	[mbar]	
d10_ij =	0.4	[mm]					ΔPmax =	0.74	[kPa]
Tavg =	10.3	[°C]					Vm (ε=0) =	0.48	[L]
pwet =	1388	[kg/m³]					Lm =	0.18	[m]
mwet =	0.66	[kg]					vmf =	4.7	[m/h]
L0 =	0.35	[m]					ε0 =	0.46	[m³/m³]
Lmf =	0.44	[m]					εmf =	0.57	[m³/m³]
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]
[0/1/2/3]									
0	11	0	0.35	2.6	n.a.	11	0	0.46	0.26
0	10.9	6	0.35	2.6	n.a.	10.9	0	0.46	0.26
0	10.9	12	0.35	7.1	n.a.	10.9	0.001	0.46	0.71
1	10.7	27	0.57	7.2	n.a.	10.7	0.002	0.67	0.72
1	10.7	30	0.6	7.3	n.a.	10.7	0.003	0.68	0.73
1	10	34	0.65	7.3	n.a.	10	0.003	0.71	0.73
1	10	38	0.69	7.3	n.a.	10	0.004	0.73	0.73
1	10	45	0.78	7.3	n.a.	10	0.004	0.75	0.73
1	10	50	0.84	7.3	n.a.	10	0.005	0.77	0.73
1	10	58	0.98	7.3	n.a.	10	0.006	0.8	0.73
1	10	64	1.08	7.3	n.a.	10	0.006	0.82	0.73
1	10.5	78	1.24	7.3	n.a.	10.5	0.007	0.84	0.73
1	10.5	84	1.52	7.4	n.a.	10.5	0.008	0.87	0.74
1	10.5	84	1.77	7.4	n.a.	10.5	0.009	0.89	0.74
1	10.5	89	2	7.4	n.a.	10.5	0.009	0.9	0.74
1	10.5	94	2.48	7.4	n.a.	10.5	0.01	0.92	0.74
L-S Fluidisation experiment nr.: 46 Saratech Spherical						A =	0.0025	[m²]	
Material =	GAC	Geldarts: A					dp/D =	0.007	[-]
D =	0.057	[m]	dp,min	dp,max			Off-set(ΔP) = 2.25	[mbar]	
d10_ij =	0.4	[mm]					ΔPmax =	0.75	[kPa]
Tavg =	15.6	[°C]					Vm (ε=0) =	0.48	[L]
pwet =	1388	[kg/m³]					Lm =	0.18	[m]
mwet =	0.66	[kg]					vmf =	5.8	[m/h]
L0 =	0.35	[m]					ε0 =	0.46	[m³/m³]
Lmf =	0.47	[m]					εmf =	0.59	[m³/m³]
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]
[0/1/2/3]									
0	16	0	0.35	2.3	n.a.	16	0	0.46	0.23
0	15.9	7	0.35	2.9	n.a.	15.9	0	0.46	0.29
0	15.9	14	0.35	7.3	n.a.	15.9	0.001	0.46	0.73
1	15.5	25	0.53	7.4	n.a.	15.5	0.002	0.64	0.74
1	16	28	0.55	7.4	n.a.	16	0.003	0.66	0.74
1	15	34	0.61	7.4	n.a.	15	0.003	0.69	0.74
1	15	39	0.65	7.4	n.a.	15	0.004	0.71	0.74
1	15	46	0.72	7.4	n.a.	15	0.005	0.74	0.74
1	15	51	0.78	7.4	n.a.	15	0.005	0.75	0.74
1	15	57	0.86	7.4	n.a.	15	0.006	0.78	0.74
1	15	64	0.96	7.4	n.a.	15	0.007	0.8	0.74
1	16	71	1.07	7.4	n.a.	16	0.007	0.82	0.74
1	16	78	1.21	7.4	n.a.	16	0.008	0.84	0.74
1	16	84	1.36	7.4	n.a.	16	0.009	0.86	0.74
1	16	91	1.63	7.4	n.a.	16	0.01	0.88	0.74
1	16	95	1.76	7.4	n.a.	16	0.01	0.89	0.74
1	16	98	1.91	7.4	n.a.	16	0.01	0.9	0.74
1	16	105	2.31	7.5	n.a.	16	0.011	0.91	0.75
1	16	108	2.5	7.5	n.a.	16	0.011	0.92	0.75
1	16	111	2.75	7.5	n.a.	16	0.012	0.93	0.75
1	16	114	3.02	7.5	n.a.	16	0.012	0.93	0.75
1	16	119	3.6	7.5	n.a.	16	0.012	0.94	0.75
L-S Fluidisation experiment nr.: 47 Saratech Spherical						A =	0.0025	[m²]	
Material =	GAC	Geldarts: A					dp/D =	0.007	[-]
D =	0.057	[m]	dp,min	dp,max			Off-set(ΔP) = 2.25	[mbar]	
d10_ij =	0.4	[mm]					ΔPmax =	0.73	[kPa]
Tavg =	20	[°C]					Vm (ε=0) =	0.49	[L]
pwet =	1380	[kg/m³]					Lm =	0.19	[m]
mwet =	0.67	[kg]					vmf =	5.8	[m/h]
L0 =	0.36	[m]					ε0 =	0.46	[m³/m³]
Lmf =	0.4	[m]					εmf =	0.51	[m³/m³]
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]
[0/1/2/3]									
0	20	0	0.36	2.3	n.a.	20	0	0.46	0.23
0	20	15	0.4	3.9	n.a.	20	0.001	0.51	0.39
0	20	25	0.5	7.2	n.a.	20	0.002	0.61	0.72
0	20	27	0.51	7.2	n.a.	20	0.002	0.62	0.72
0	20	33	0.54	7.2	n.a.	20	0.003	0.64	0.72
0	20	40	0.6	7.2	n.a.	20	0.004	0.67	0.72
1	20	47	0.65	7.2	n.a.	20	0.005	0.7	0.72
1	20	52	0.7	7.1	n.a.	20	0.005	0.72	0.71
1	20	58	0.74	7.2	n.a.	20	0.006	0.74	0.72
1	20	64	0.82	7.2	n.a.	20	0.007	0.76	0.72

1	20	72	0.9	7.2	n.a.	20	0.007	0.78	0.72	n.a.
1	20	76	0.99	7.2	n.a.	20	0.008	0.8	0.72	n.a.
1	20	82	1.04	7.2	n.a.	20	0.008	0.81	0.72	n.a.
1	20	88	1.15	7.2	n.a.	20	0.009	0.83	0.72	n.a.
1	20	92	1.21	7.2	n.a.	20	0.01	0.84	0.72	n.a.
1	20	95	1.27	7.2	n.a.	20	0.01	0.84	0.72	n.a.
1	20	103	1.49	7.2	n.a.	20	0.011	0.87	0.72	n.a.
1	20	108	1.67	7.2	n.a.	20	0.011	0.88	0.72	n.a.
1	20	112	1.81	7.2	n.a.	20	0.012	0.89	0.72	n.a.
1	20	116	1.95	7.2	n.a.	20	0.012	0.9	0.72	n.a.
1	20	120	2.1	7.2	n.a.	20	0.013	0.9	0.72	n.a.
1	20	124	2.31	7.2	n.a.	20	0.013	0.91	0.72	n.a.
1	20	127	2.43	7.2	n.a.	20	0.013	0.92	0.72	n.a.
1	20	131	2.64	7.3	n.a.	20	0.014	0.92	0.73	n.a.
L-S Fluidisation experiment nr.: 48 Saratech Spherical						A =	0.0025	[m²]		
Material =		GAC		Geldarts: A			dp/D =	0.007		
D =		0.057		[m]			Off-set(ΔP) = 1.38		[mbar]	
d10_ij =		0.4		[mm]			ΔPmax =	0.74	[kPa]	
Tavg =		30.1		[°C]			Vm (ε=0) =	0.48	[L]	
pwet =		1388		[kg/m³]			Lm =	0.18	[m]	
mwet =		0.66		[g]			vmf =	7.8	[m/h]	
L0 =		0.35		[m]			ε0 =	0.47	[m³/m³]	
Lmf =		0.4		[m]			εmf =	0.52	[m³/m³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference	Hydrostatic	Temperature	Velocity	Voidage	Pressure difference	Hydrostatic
	T	Qw	L	ΔP(399cm)		T (interp.)	vs	ε	ΔP	
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	30	0	0.35	1.4	n.a.	30	0	0.47	0.14	n.a.
0	30	10	0.36	3.8	n.a.	30	0.001	0.47	0.38	n.a.
0	30	19	0.4	7.1	n.a.	30	0.002	0.52	0.71	n.a.
1	30	24	0.47	7.3	n.a.	30	0.002	0.6	0.73	n.a.
1	30	28	0.49	7.3	n.a.	30	0.003	0.61	0.73	n.a.
1	30	31	0.51	7.2	n.a.	30	0.003	0.63	0.72	n.a.
1	30	34	0.53	7.2	n.a.	30	0.003	0.64	0.72	n.a.
1	31	39	0.56	7.2	n.a.	31	0.004	0.66	0.72	n.a.
1	31	43	0.58	7.2	n.a.	31	0.004	0.68	0.72	n.a.
1	31	49	0.63	7.2	n.a.	31	0.005	0.7	0.72	n.a.
1	31	54	0.66	7.2	n.a.	31	0.005	0.71	0.72	n.a.
1	30	64	0.74	7.2	n.a.	30	0.006	0.74	0.72	n.a.
1	30	70	0.81	7.2	n.a.	30	0.007	0.76	0.72	n.a.
1	30	79	0.9	7.2	n.a.	30	0.008	0.79	0.72	n.a.
1	30	87	1.01	7.2	n.a.	30	0.009	0.81	0.72	n.a.
1	30	97	1.16	7.2	n.a.	30	0.01	0.83	0.72	n.a.
1	30	106	1.33	7.3	n.a.	30	0.011	0.85	0.73	n.a.
1	30	114	1.54	7.3	n.a.	30	0.012	0.87	0.73	n.a.
1	30	119	1.72	7.3	n.a.	30	0.013	0.89	0.73	n.a.
1	30	126	1.98	7.3	n.a.	30	0.013	0.9	0.73	n.a.
1	30	130	2.18	7.3	n.a.	30	0.014	0.91	0.73	n.a.
1	30	133	2.36	7.4	n.a.	30	0.014	0.92	0.74	n.a.
1	30	135	2.46	7.4	n.a.	30	0.014	0.92	0.74	n.a.
1	30	138	2.72	7.4	n.a.	30	0.015	0.93	0.74	n.a.

4.2 Full-scale long-term experiments with Aquasorb K-6300

These GAC grains were obtained from a full-scale filter with a retention time of 2-3 years. The filter is backwashed approximately once a week.

L-S Fluidisation experiment nr.: 49 Aquasorb K-6300					A =	0.0025	[m²]			
Material =	GAC	Geldarts: B				dp/D =	0.023	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) = 3.5	[mbar]			
d10_ij =	1.31	[mm]	1.2	1.44		ΔPmax =	0.71	[kPa]		
Tavg =	4	[°C]				Vm (ε=0) =	0.38	[L]		
pwet =	1451	[kg/m³]				Lm =	0.15	[m]		
mwet =	0.55	[kg]				vmf =	27.4	[m/h]		
L0 =	0.39	[m]				z0 =	0.61	[m³/m³]		
Lmf =	0.43	[m]				zmf =	0.65	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	4	0	0.39	3.6	n.a.	4	0	0.61	0.36	n.a.
0	4	15	0.39	0.5	n.a.	4	0.001	0.61	0.05	n.a.
0	4	27	0.39	3	n.a.	4	0.002	0.61	0.3	n.a.
0	4	30	0.39	3.5	n.a.	4	0.003	0.62	0.35	n.a.
0	5	38	0.39	4.6	n.a.	5	0.004	0.62	0.46	n.a.
0	4	45	0.4	5.2	n.a.	4	0.004	0.62	0.52	n.a.
0	4	49	0.4	5.7	n.a.	4	0.005	0.63	0.57	n.a.
0	4	55	0.41	6.2	n.a.	4	0.006	0.63	0.62	n.a.
0	4	63	0.42	6.6	n.a.	4	0.006	0.64	0.66	n.a.
0	4	69	0.43	6.7	n.a.	4	0.007	0.65	0.67	n.a.
1	4	75	0.44	6.8	n.a.	4	0.008	0.66	0.68	n.a.
1	4	84	0.46	6.8	n.a.	4	0.009	0.67	0.68	n.a.
1	4	85	0.46	6.9	n.a.	4	0.009	0.67	0.69	n.a.
1	4	93	0.47	6.9	n.a.	4	0.01	0.68	0.69	n.a.
1	4	100	0.49	6.9	n.a.	4	0.01	0.69	0.69	n.a.
1	4	111	0.51	6.9	n.a.	4	0.012	0.7	0.69	n.a.
1	4	123	0.54	6.9	n.a.	4	0.013	0.72	0.69	n.a.
1	4	131	0.55	6.9	n.a.	4	0.014	0.73	0.69	n.a.
1	4	143	0.58	6.9	n.a.	4	0.015	0.74	0.69	n.a.
1	4	153	0.61	6.9	n.a.	4	0.016	0.75	0.69	n.a.
1	4	164	0.63	7	n.a.	4	0.017	0.76	0.7	n.a.
1	4	177	0.67	7	n.a.	4	0.019	0.77	0.7	n.a.
1	4	190	0.71	7	n.a.	4	0.02	0.78	0.7	n.a.
1	4	202	0.75	7	n.a.	4	0.022	0.8	0.7	n.a.
1	4	215	0.81	7	n.a.	4	0.023	0.81	0.7	n.a.
1	4	231	0.88	7.1	n.a.	4	0.025	0.83	0.71	n.a.
1	4	240	0.93	7.1	n.a.	4	0.026	0.83	0.71	n.a.
1	4	254	1.03	7.1	n.a.	4	0.027	0.85	0.71	n.a.
1	4	267	1.13	7.1	n.a.	4	0.029	0.86	0.71	n.a.
1	4	280	1.25	7.1	n.a.	4	0.03	0.88	0.71	n.a.
1	4	290	1.37	7.1	n.a.	4	0.031	0.89	0.71	n.a.
L-S Fluidisation experiment nr.: 50 Aquasorb K-6300					A =	0.0025	[m²]			
Material =	GAC	Geldarts: B				dp/D =	0.023	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) = 3.25	[mbar]			
d10_ij =	1.31	[mm]	1.2	1.44		ΔPmax =	0.72	[kPa]		
Tavg =	10.4	[°C]				Vm (ε=0) =	0.38	[L]		
pwet =	1451	[kg/m³]				Lm =	0.15	[m]		
mwet =	0.55	[kg]				vmf =	31.5	[m/h]		
L0 =	0.39	[m]				z0 =	0.61	[m³/m³]		
Lmf =	0.43	[m]				zmf =	0.65	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	10	0	0.39	3.4	n.a.	10	0	0.61	0.34	n.a.
0	10	25	0.39	2.4	n.a.	10	0.002	0.61	0.24	n.a.
0	10.5	37	0.39	3.9	n.a.	10.5	0.004	0.62	0.39	n.a.
0	10.5	44	0.4	4.7	n.a.	10.5	0.004	0.62	0.47	n.a.
0	10.5	54	0.4	5.7	n.a.	10.5	0.005	0.63	0.57	n.a.
0	10.5	62	0.41	6.2	n.a.	10.5	0.006	0.63	0.62	n.a.
0	10.5	82	0.44	6.7	n.a.	10.5	0.008	0.66	0.67	n.a.
1	10.5	88	0.45	6.9	n.a.	10.5	0.009	0.66	0.69	n.a.
1	10.5	93	0.46	6.9	n.a.	10.5	0.01	0.67	0.69	n.a.
1	10.5	111	0.49	6.9	n.a.	10.5	0.012	0.69	0.69	n.a.
1	10.5	129	0.53	6.9	n.a.	10.5	0.014	0.71	0.69	n.a.
1	10.5	143	0.55	7	n.a.	10.5	0.015	0.73	0.7	n.a.
1	10.5	156	0.58	7	n.a.	10.5	0.016	0.74	0.7	n.a.
1	10.5	177	0.63	7	n.a.	10.5	0.019	0.76	0.7	n.a.
1	10.5	192	0.67	7	n.a.	10.5	0.02	0.77	0.7	n.a.
1	10.5	207	0.72	7.1	n.a.	10.5	0.022	0.79	0.71	n.a.
1	10.5	232	0.81	7.1	n.a.	10.5	0.025	0.81	0.71	n.a.
1	10.5	251	0.92	7.1	n.a.	10.5	0.027	0.83	0.71	n.a.
1	10.5	264	0.99	7.1	n.a.	10.5	0.028	0.84	0.71	n.a.
1	10	280	1.11	7.2	n.a.	10	0.03	0.86	0.72	n.a.
1	10	289	1.2	7.2	n.a.	10	0.031	0.87	0.72	n.a.
L-S Fluidisation experiment nr.: 51 Aquasorb K-6300					A =	0.0025	[m²]			
Material =	GAC	Geldarts: B				dp/D =	0.023	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) = 3	[mbar]			
d10_ij =	1.31	[mm]	1.2	1.44		ΔPmax =	0.72	[kPa]		
Tavg =	16.8	[°C]				Vm (ε=0) =	0.38	[L]		
pwet =	1451	[kg/m³]				Lm =	0.15	[m]		
mwet =	0.55	[kg]				vmf =	35.6	[m/h]		
L0 =	0.39	[m]				z0 =	0.61	[m³/m³]		
Lmf =	0.43	[m]				zmf =	0.65	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	16	0	0.39	3.1	n.a.	16	0	0.62	0.31	n.a.
0	16	24	0.39	1.8	n.a.	16	0.002	0.61	0.18	n.a.
0	16	36	0.39	3.3	n.a.	16	0.003	0.62	0.33	n.a.
0	17	44	0.39	4.2	n.a.	17	0.004	0.62	0.42	n.a.
0	17	53	0.4	5.2	n.a.	17	0.005	0.62	0.52	n.a.
0	17	62	0.4	5.8	n.a.	17	0.006	0.63	0.58	n.a.
0	17	79	0.42	6.6	n.a.	17	0.008	0.64	0.66	n.a.
1	17	91	0.43	6.9	n.a.	17	0.009	0.65	0.69	n.a.
1	17	94	0.44	6.9	n.a.	17	0.01	0.66	0.69	n.a.
1	17	111	0.47	6.9	n.a.	17	0.012	0.68	0.69	n.a.
1	17	128	0.5	6.9	n.a.	17	0.014	0.7	0.69	n.a.
1	17	144	0.53	7	n.a.	17	0.015	0.71	0.7	n.a.
1	17	158	0.56	7	n.a.	17	0.017	0.73	0.7	n.a.
1	17	177	0.6	7.1	n.a.	17	0.019	0.75	0.71	n.a.
1	17	194	0.64	7.1	n.a.	17	0.021	0.76	0.71	n.a.
1	17	212	0.68	7.1	n.a.	17	0.023	0.78	0.71	n.a.
1	17	232	0.74	7.1	n.a.	17	0.025	0.79	0.71	n.a.
1	17	249	0.81	7.1	n.a.	17	0.027	0.81	0.71	n.a.
1	17	261	0.86	7.2	n.a.	17	0.028	0.82	0.72	n.a.
1	16	281	0.97	7.2	n.a.	16	0.03	0.84	0.72	n.a.
1	16	289	1.03	7.2	n.a.	16	0.031	0.85	0.72	n.a.
L-S Fluidisation experiment nr.: 52 Aquasorb K-6300					A =	0.0025	[m²]			

Material =	GAC	Geldarts: B				dp/D =	0.023	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) = 2.5	[mbar]			
d10_ij =	1.31	[mm]	1.2	1.44		ΔPmax =	0.72	[kPa]		
Tavg =	24.5	[°C]				Vm (ε=0) =	0.38	[L]		
pwet =	1451	[kg/m³]				Lm =	0.15	[m]		
mwet =	0.55	[kg]				vmf =	38.2	[m/h]		
L0 =	0.39	[m]				ε0 =	0.61	[m³/m³]		
Lmf =	0.43	[m]				εmf =	0.65	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
[0/1/2/3]	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	24	0	0.39	2.6	n.a.	24	0	0.61	0.26	n.a.
0	24	24	0.38	1.4	n.a.	24	0.002	0.61	0.14	n.a.
0	24	24	0.37	1.9	n.a.	24	0.002	0.6	0.19	n.a.
0	24	29	0.38	1.9	n.a.	24	0.003	0.6	0.19	n.a.
0	25	47	0.39	4	n.a.	25	0.005	0.61	0.4	n.a.
0	25	58	0.39	4.9	n.a.	25	0.006	0.61	0.49	n.a.
0	25	72	0.4	5.9	n.a.	25	0.007	0.62	0.59	n.a.
0	25	89	0.42	6.4	n.a.	25	0.009	0.64	0.64	n.a.
0	24	97	0.43	6.7	n.a.	24	0.01	0.65	0.67	n.a.
1	26	120	0.46	6.8	n.a.	26	0.013	0.67	0.68	n.a.
1	25	135	0.48	6.8	n.a.	25	0.014	0.69	0.68	n.a.
1	25	150	0.51	6.8	n.a.	25	0.016	0.7	0.68	n.a.
1	25	167	0.54	6.9	n.a.	25	0.018	0.72	0.69	n.a.
1	25	179	0.57	6.9	n.a.	25	0.019	0.73	0.69	n.a.
1	24	192	0.6	7	n.a.	24	0.02	0.75	0.7	n.a.
1	24	214	0.65	7	n.a.	24	0.023	0.77	0.7	n.a.
1	24	234	0.71	7.1	n.a.	24	0.025	0.78	0.71	n.a.
1	24	257	0.78	7.1	n.a.	24	0.028	0.8	0.71	n.a.
1	24	272	0.84	7.2	n.a.	24	0.029	0.82	0.72	n.a.
1	24	289	0.92	7.2	n.a.	24	0.031	0.83	0.72	n.a.
L-S Fluidisation experiment nr.: 53 Aquasorb K-6300										
Material =	GAC	Geldarts: B			A =	0.0025	[m²]			
D =	0.057	[m]	dp,min	dp,max		dp/D =	0.023	[-]		
d10_ij =	1.31	[mm]	1.2	1.44		Off-set(ΔP) = 2	[mbar]			
Tavg =	31.9	[°C]				ΔPmax =	0.69	[kPa]		
pwet =	1451	[kg/m³]				Vm (ε=0) =	0.38	[L]		
mwet =	0.55	[kg]				Lm =	0.15	[m]		
L0 =	0.39	[m]				vmf =	38	[m/h]		
Lmf =	0.41	[m]				ε0 =	0.61	[m³/m³]		
						εmf =	0.64	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
[0/1/2/3]	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	32	0	0.39	2.1	n.a.	32	0	0.61	0.21	n.a.
0	29	23	0.39	1.3	n.a.	29	0.002	0.61	0.13	n.a.
0	29	31	0.39	2.1	n.a.	29	0.003	0.61	0.21	n.a.
0	30	51	0.39	4	n.a.	30	0.005	0.61	0.4	n.a.
0	31	60	0.39	4.4	n.a.	31	0.006	0.61	0.44	n.a.
0	32	72	0.39	5.5	n.a.	32	0.007	0.62	0.55	n.a.
0	31	78	0.4	5.8	n.a.	31	0.008	0.62	0.58	n.a.
0	32	80	0.4	6	n.a.	32	0.008	0.62	0.6	n.a.
0	32	84	0.4	6.2	n.a.	32	0.009	0.62	0.62	n.a.
1	32	97	0.41	6.6	n.a.	32	0.01	0.64	0.66	n.a.
1	32	121	0.45	6.6	n.a.	32	0.013	0.66	0.66	n.a.
1	32	140	0.48	6.7	n.a.	32	0.015	0.68	0.67	n.a.
1	32	151	0.5	6.7	n.a.	32	0.016	0.7	0.67	n.a.
1	31	164	0.52	6.7	n.a.	31	0.017	0.71	0.67	n.a.
1	32	181	0.55	6.7	n.a.	32	0.019	0.72	0.67	n.a.
1	32	191	0.57	6.8	n.a.	32	0.02	0.73	0.68	n.a.
1	32	209	0.61	6.9	n.a.	32	0.022	0.75	0.69	n.a.
1	32	226	0.64	6.9	n.a.	32	0.024	0.76	0.69	n.a.
1	32	240	0.68	6.8	n.a.	32	0.026	0.78	0.68	n.a.
1	32	253	0.72	6.9	n.a.	32	0.027	0.79	0.69	n.a.
1	32	274	0.78	6.9	n.a.	32	0.029	0.8	0.69	n.a.
1	32	290	0.85	6.9	n.a.	32	0.031	0.82	0.69	n.a.

4.3 Validation experiments

These validation experiments were performed before the calibration experiments (Section 4.1). It was not possible to measure the wetted particle mass in a direct way and accurately. Therefore, the wetted particle mass was estimated according to a mass balance calculation that could have been slightly overestimated.

The differential pressure was measured with a piezometric head loss with an initial off-set within a range of -2 up to 2 mbar. The bed heights were measured accurately.

L-S Fluidisation experiment nr.: 54 Filtrasorb 300C						A =		0.0025		[m²]		
Material =	GAC	Geldarts: B				dp/D =	0.021		[-]			
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) = 0	[mbar]					
d10_ij =	1.23	[mm]	1.07	1.42		ΔPmax =	1.36		[kPa]			
Tavg =	6	[°C]				Vm (ε=0) =	0.74		[L]			
pwet =	1489	[kg/m³]				Lm =	0.29		[m]			
mwet =	1.1	[kg]				vmf =	23.9		[m/h]			
L0 =	0.53	[m]				α0 =	0.44		[m³/m³]			
Lmf =	0.59	[m]				αmf =	0.5		[m³/m³]			
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference			
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic		
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]		
0	6	0	0.54	1	1	6	0	0.46	0.1	0.1		
0	6	10	0.54	2	2	6	0.001	0.46	0.2	0.2		
0	6	20	0.54	3	3	6	0.002	0.46	0.3	0.3		
0	6	32	0.54	4.8	4.8	6	0.003	0.46	0.48	0.48		
0	6	38	0.54	7.2	7.2	6	0.004	0.46	0.72	0.72		
0	6	53	0.56	10.2	10.2	6	0.005	0.48	1.02	1.02		
1	6	69	0.6	12	12	6	0.007	0.52	1.2	1.2		
1	6	99	0.7	13	13	6	0.01	0.58	1.3	1.3		
1	6	128	0.77	12.9	12.9	6	0.013	0.62	1.29	1.29		
1	6	145	0.88	13.6	13.6	6	0.015	0.67	1.36	1.36		
1	6	173	1.05	13.6	13.6	6	0.018	0.72	1.36	1.36		
1	6	193	1.08	13.5	13.5	6	0.021	0.73	1.35	1.35		
1	6	210	1.28	13.5	13.5	6	0.022	0.77	1.35	1.35		
1	6	249	1.46	13.5	13.5	6	0.027	0.8	1.35	1.35		
1	6	260	1.66	13.5	13.6	6	0.028	0.82	1.35	1.36		
1	6	296	1.71	13.5	13.5	6	0.032	0.82	1.35	1.35		
1	6	310	2.05	13.5	13.5	6	0.033	0.85	1.35	1.35		
L-S Fluidisation experiment nr.: 55 Filtrasorb 300C						A =		0.0025		[m²]		
Material =	GAC	Geldarts: B				dp/D =	0.021		[-]			
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) = 0	[mbar]					
d10_ij =	1.23	[mm]	1.07	1.42		ΔPmax =	1.43		[kPa]			
Tavg =	6.4	[°C]				Vm (ε=0) =	0.74		[L]			
pwet =	1489	[kg/m³]				Lm =	0.29		[m]			
mwet =	1.1	[kg]				vmf =	25.4		[m/h]			
L0 =	0.53	[m]				α0 =	0.44		[m³/m³]			
Lmf =	0.59	[m]				αmf =	0.5		[m³/m³]			
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference			
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic		
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]		
0	9	0	0.53	0	0	9	0	0.45	0	0		
0	9	10	0.53	1	1	9	0.001	0.45	0.1	0.1		
0	9	20	0.53	2	2	9	0.002	0.45	0.2	0.2		
0	9	30	0.53	3	3	9	0.003	0.45	0.3	0.3		
0	9	41	0.53	9	9	9	0.004	0.45	0.9	0.9		
0	9	48	0.54	10.6	10.6	9	0.005	0.46	1.06	1.06		
0	9	57	0.57	11.9	11.9	9	0.006	0.49	1.19	1.19		
1	8	71	0.61	12.9	12.9	8	0.007	0.52	1.29	1.29		
1	8	99	0.7	12.9	12.9	8	0.01	0.58	1.29	1.29		
1	7	119	0.79	13.2	13.2	7	0.012	0.63	1.32	1.32		
1	6	148	0.89	13.3	13.3	6	0.016	0.67	1.33	1.33		
1	6	172	1.04	13.8	13.8	6	0.018	0.71	1.38	1.38		
1	6	196	1.11	13.7	13.7	6	0.021	0.73	1.37	1.37		
1	6	222	1.29	13.7	13.7	6	0.024	0.77	1.37	1.37		
1	6	256	1.56	13.8	13.8	6	0.027	0.81	1.38	1.38		
1	6	257	1.73	13.7	13.7	6	0.027	0.83	1.37	1.37		
1	6	305	2.1	14.1	14.1	6	0.033	0.86	1.41	1.41		
1	6	319	2.19	14.3	14.3	6	0.034	0.86	1.43	1.43		
L-S Fluidisation experiment nr.: 56 Filtrasorb 300C						A =		0.0025		[m²]		
Material =	GAC	Geldarts: B				dp/D =	0.021		[-]			
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) = -0.25	[mbar]					
d10_ij =	1.23	[mm]	1.07	1.42		ΔPmax =	1.39		[kPa]			
Tavg =	21.1	[°C]				Vm (ε=0) =	0.74		[L]			
pwet =	1489	[kg/m³]				Lm =	0.29		[m]			
mwet =	1.1	[kg]				vmf =	26.2		[m/h]			
L0 =	0.53	[m]				α0 =	0.44		[m³/m³]			
Lmf =	0.55	[m]				αmf =	0.46		[m³/m³]			
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference			
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic		
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]		
0	20	0	0.53	0.5	0.5	20	0	0.45	0.05	0.05		
0	20	10	0.53	1.2	1	20	0.001	0.45	0.12	0.1		
0	20	20	0.53	2.2	2	20	0.002	0.45	0.22	0.2		
0	20	30	0.53	3.3	3	20	0.003	0.45	0.33	0.3		
0	20.5	38	0.53	7	6.8	20.5	0.004	0.45	0.7	0.68		
0	20.6	49	0.53	10	9.7	20.6	0.005	0.45	1	0.97		
0	19.7	62	0.54	12	11.7	19.7	0.006	0.46	1.2	1.17		
1	21	71	0.56	12.5	12.2	21	0.007	0.48	1.25	1.22		
1	21	83	0.59	12.8	12.5	21	0.009	0.5	1.28	1.25		
1	21	104	0.65	12.8	12.5	21	0.011	0.55	1.28	1.25		
1	23	126	0.7	12.7	12.4	23	0.013	0.58	1.27	1.24		
1	21	147	0.76	13.2	12.9	21	0.016	0.61	1.32	1.29		
1	21	171	0.83	13.9	13.6	21	0.018	0.64	1.39	1.36		
1	21	200	0.94	13.2	13	21	0.021	0.69	1.32	1.3		
1	21	224	1.04	13.2	12.9	21	0.024	0.72	1.32	1.29		
1	21	249	1.17	13.4	13.1	21	0.027	0.75	1.34	1.31		
1	21	281	1.36	13.3	13.1	21	0.03	0.78	1.33	1.31		
1	21	295	1.45	13.3	13	21	0.032	0.79	1.33	1.3		
1	21	315	1.6	13.7	13.4	21	0.034	0.81	1.37	1.34		
1	21	342	1.79	13.7	13.4	21	0.037	0.83	1.37	1.34		
L-S Fluidisation experiment nr.: 57 Filtrasorb 300C						A =		0.0025		[m²]		
Material =	GAC	Geldarts: B				dp/D =	0.021		[-]			
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) = -0.5	[mbar]					
d10_ij =	1.23	[mm]	1.07	1.42		ΔPmax =	1.41		[kPa]			
Tavg =	29.3	[°C]				Vm (ε=0) =	0.74		[L]			
pwet =	1489	[kg/m³]				Lm =	0.29		[m]			
mwet =	1.1	[kg]				vmf =	27.4		[m/h]			
L0 =	0.53	[m]				α0 =	0.44		[m³/m³]			
Lmf =	0.54	[m]				αmf =	0.45		[m³/m³]			

Status bed	Temperature T [°C]	Water flow Qw [L/h]	Bed height L [m]	Pressure difference ΔP(399cm) [mbar]	Hydrostatic [cm H2O]	Temperature T (interp.) [°C]	Velocity vs [m/s]	Voidage ε [m³/m³]	Pressure difference ΔP [kPa]	Hydrostatic [kPa]
[0/1/2/3]										
0	31	0	0.52	0.5	0.5	31	0	0.44	0.05	0.05
0	31	10	0.52	1.5	1	31	0.001	0.44	0.15	0.1
0	31	20	0.52	2.5	2	31	0.002	0.44	0.25	0.2
0	31	30	0.52	3.5	3	31	0.003	0.44	0.35	0.3
0	30	41	0.52	7.3	6.8	30	0.004	0.44	0.73	0.68
0	31	60	0.54	10.3	9.7	31	0.006	0.46	1.03	0.97
1	30	80	0.57	12.3	11.7	30	0.008	0.49	1.23	1.17
1	30	101	0.62	12.7	12.2	30	0.01	0.52	1.27	1.22
1	30	131	0.69	13	12.4	30	0.014	0.57	1.3	1.24
1	30	153	0.74	13	12.4	30	0.016	0.6	1.3	1.24
1	30	181	0.82	13.4	12.9	30	0.019	0.64	1.34	1.29
1	30	205	0.9	14.1	13.5	30	0.022	0.67	1.41	1.35
1	29	222	0.95	13.5	12.9	29	0.024	0.69	1.35	1.29
1	27	254	1.14	13.4	12.9	27	0.027	0.74	1.34	1.29
1	30	276	1.23	13.6	13.1	30	0.03	0.76	1.36	1.31
1	28	300	1.4	13.6	13	28	0.032	0.79	1.36	1.3
1	29	321	1.54	13.6	13	29	0.034	0.81	1.36	1.3
1	29	356	1.92	13.9	13.4	29	0.038	0.84	1.39	1.34
L-S Fluidisation experiment nr.: 58	Aquasorb KGA					A =	0.0025	[m²]		
Material =	GAC	Geldarts: B				dp/D =	0.021	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	-1.5	[mbar]		
d10_ij =	1.23	[mm]	1.07	1.42		ΔPmax =	1.08	[kPa]		
Tavg =	13.3	[°C]				Vm (ε=0) =	0.72	[L]		
pwet =	1385	[kg/m³]				Lm =	0.28	[m]		
mwet =	1	[kg]				vmf =	23.5	[m/h]		
L0 =	0.55	[m]				ε0 =	0.48	[m³/m³]		
Lmf =	0.59	[m]				εmf =	0.51	[m³/m³]		
Status bed	Temperature T [°C]	Water flow Qw [L/h]	Bed height L [m]	Pressure difference ΔP(399cm) [mbar]	Hydrostatic [cm H2O]	Temperature T (interp.) [°C]	Velocity vs [m/s]	Voidage ε [m³/m³]	Pressure difference ΔP [kPa]	Hydrostatic [kPa]
[0/1/2/3]										
0	13	0	0.55	-0.5	-0.5	13	0	0.48	-0.05	-0.05
0	13	10	0.55	2.5	1	13	0.001	0.48	0.25	0.1
0	13	20	0.55	3.5	2	13	0.002	0.48	0.35	0.2
0	13	30	0.55	4.6	3	13	0.003	0.48	0.46	0.3
0	13	37	0.55	6.1	4.5	13	0.004	0.48	0.61	0.45
0	13	52	0.58	8.6	7.1	13	0.005	0.51	0.86	0.71
1	13	76	0.65	10	8.4	13	0.008	0.56	1	0.84
1	13	93	0.72	10.2	8.6	13	0.01	0.6	1.02	0.86
1	13	115	0.82	10.3	8.8	13	0.012	0.65	1.03	0.88
1	13	141	0.96	10.5	9	13	0.015	0.7	1.05	0.9
1	14	180	1.12	10.8	9.2	14	0.019	0.74	1.08	0.92
1	14	211	1.31	10.8	9.3	14	0.022	0.78	1.08	0.93
L-S Fluidisation experiment nr.: 59	Aquasorb KGA					A =	0.0025	[m²]		
Material =	GAC	Geldarts: B				dp/D =	0.021	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	-1.5	[mbar]		
d10_ij =	1.23	[mm]	1.07	1.42		ΔPmax =	1.02	[kPa]		
Tavg =	24.2	[°C]				Vm (ε=0) =	0.72	[L]		
pwet =	1385	[kg/m³]				Lm =	0.28	[m]		
mwet =	1	[kg]				vmf =	25	[m/h]		
L0 =	0.55	[m]				ε0 =	0.48	[m³/m³]		
Lmf =	0.6	[m]				εmf =	0.52	[m³/m³]		
Status bed	Temperature T [°C]	Water flow Qw [L/h]	Bed height L [m]	Pressure difference ΔP(399cm) [mbar]	Hydrostatic [cm H2O]	Temperature T (interp.) [°C]	Velocity vs [m/s]	Voidage ε [m³/m³]	Pressure difference ΔP [kPa]	Hydrostatic [kPa]
[0/1/2/3]										
0	24	0	0.54	-0.5	-0.5	24	0	0.47	-0.05	-0.05
0	24	10	0.54	2.5	1	24	0.001	0.47	0.25	0.1
0	24	20	0.54	3.5	2	24	0.002	0.47	0.35	0.2
0	24	30	0.54	4.6	3	24	0.003	0.47	0.46	0.3
0	24	35	0.54	5.3	3.7	24	0.003	0.47	0.53	0.37
0	23	55	0.57	8.5	6.9	23	0.005	0.5	0.85	0.69
1	24	73	0.61	10.2	8.6	24	0.007	0.54	1.02	0.86
1	23	81	0.63	10.2	8.6	23	0.008	0.55	1.02	0.86
1	24	95	0.67	10.2	8.6	24	0.01	0.57	1.02	0.86
1	24	111	0.73	10.2	8.6	24	0.012	0.61	1.02	0.86
1	25	121	0.77	10.1	8.5	25	0.013	0.63	1.01	0.85
1	25	128	0.81	10.1	8.6	25	0.013	0.65	1.01	0.86
1	25	145	0.87	10	8.5	25	0.015	0.67	1	0.85
1	25	178	1.05	10	8.4	25	0.019	0.73	1	0.84
1	25	204	1.2	10.2	8.6	25	0.022	0.76	1.02	0.86
1	22	231	1.38	10.1	8.6	22	0.025	0.79	1.01	0.86
L-S Fluidisation experiment nr.: 60	Aquasorb KGA					A =	0.0025	[m²]		
Material =	GAC	Geldarts: B				dp/D =	0.021	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	-1.25	[mbar]		
d10_ij =	1.23	[mm]	1.07	1.42		ΔPmax =	1.07	[kPa]		
Tavg =	16.9	[°C]				Vm (ε=0) =	0.71	[L]		
pwet =	1385	[kg/m³]				Lm =	0.28	[m]		
mwet =	0.99	[kg]				vmf =	23.5	[m/h]		
L0 =	0.54	[m]				ε0 =	0.48	[m³/m³]		
Lmf =	0.59	[m]				εmf =	0.52	[m³/m³]		
Status bed	Temperature T [°C]	Water flow Qw [L/h]	Bed height L [m]	Pressure difference ΔP(399cm) [mbar]	Hydrostatic [cm H2O]	Temperature T (interp.) [°C]	Velocity vs [m/s]	Voidage ε [m³/m³]	Pressure difference ΔP [kPa]	Hydrostatic [kPa]
[0/1/2/3]										
0	17	0	0.54	-0.5	-0.5	17	0	0.48	-0.05	-0.05
0	17	10	0.54	2.3	1	17	0.001	0.48	0.23	0.1
0	17	20	0.54	3.3	2	17	0.002	0.48	0.33	0.2
0	17	30	0.54	4.3	3	17	0.003	0.48	0.43	0.3
0	17	33	0.55	5	3.7	17	0.003	0.48	0.5	0.37
0	17	43	0.55	7.3	5.9	17	0.004	0.49	0.73	0.59
0	17	56	0.58	9.1	7.8	17	0.006	0.51	0.91	0.78
1	17	63	0.6	9.6	8.3	17	0.006	0.53	0.96	0.83
1	17	71	0.62	10.1	8.8	17	0.007	0.54	1.01	0.88
1	17	85	0.67	10.1	8.8	17	0.009	0.58	1.01	0.88
1	17	100	0.73	10.6	9.3	17	0.01	0.61	1.06	0.93
1	17	120	0.82	10.6	9.3	17	0.013	0.65	1.06	0.93
1	17	133	0.87	10.3	9	17	0.014	0.67	1.03	0.9
1	16	165	1.02	10.5	9.2	16	0.017	0.72	1.05	0.92
1	17	180	1.13	10.5	9.2	17	0.019	0.75	1.05	0.92
1	17	198	1.2	10.5	9.2	17	0.021	0.76	1.05	0.92
1	17	215	1.4	10.5	9.2	17	0.023	0.79	1.05	0.92
1	17	227	1.5	10.7	9.4	17	0.024	0.81	1.07	0.94
L-S Fluidisation experiment nr.: 61	Aquasorb KGA					A =	0.0025	[m²]		
Material =	GAC	Geldarts: B				dp/D =	0.021	[-]		
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	-2	[mbar]		
d10_ij =	1.23	[mm]	1.07	1.42		ΔPmax =	1.06	[kPa]		
Tavg =	31	[°C]				Vm (ε=0) =	0.71	[L]		
pwet =	1385	[kg/m³]				Lm =	0.28	[m]		
mwet =	0.99	[kg]				vmf =	27.4	[m/h]		
L0 =	0.54	[m]				ε0 =	0.48	[m³/m³]		
Lmf =	0.58	[m]				εmf =	0.51	[m³/m³]		
Status bed	Temperature T [°C]	Water flow Qw [L/h]	Bed height L [m]	Pressure difference ΔP(399cm) [mbar]	Hydrostatic [cm H2O]	Temperature T (interp.) [°C]	Velocity vs [m/s]	Voidage ε [m³/m³]	Pressure difference ΔP [kPa]	Hydrostatic [kPa]
[0/1/2/3]										
0	28	0	0.52	-0.5	-0.5	28	0	0.46	-0.05	-0.05
0	35	10	0.52	3	1	35	0.001	0.46	0.3	0.1

0	35	20	0.52	4.1	2	35	0.002	0.46	0.41	0.2
0	35	30	0.52	5.1	3	35	0.003	0.46	0.51	0.3
0	29	33	0.53	5.5	3.4	29	0.003	0.47	0.55	0.34
0	35	39	0.54	6.7	4.6	35	0.004	0.48	0.67	0.46
0	35	50	0.54	8.1	6	35	0.005	0.48	0.81	0.6
0	34	61	0.57	8.1	6	34	0.006	0.51	0.81	0.6
1	34	77	0.59	9.5	7.4	34	0.008	0.52	0.95	0.74
1	33	85	0.62	9.7	7.6	33	0.009	0.54	0.97	0.76
1	33	95	0.65	9.9	7.8	33	0.01	0.57	0.99	0.78
1	29	105	0.7	9.9	7.8	29	0.011	0.59	0.99	0.78
1	31	124	0.74	9.9	7.8	31	0.013	0.62	0.99	0.78
1	32	140	0.82	10	8	32	0.015	0.65	1	0.8
1	30	149	0.86	10.1	8	30	0.016	0.67	1.01	0.8
1	30	174	0.97	10.4	8.3	30	0.018	0.71	1.04	0.83
1	30	201	1.15	10.4	8.3	30	0.021	0.75	1.04	0.83
1	30	222	1.3	10.6	8.6	30	0.024	0.78	1.06	0.86
1	30	237	1.4	10.4	8.4	30	0.025	0.79	1.04	0.84
L-S Fluidisation experiment nr.: 62 Filtrasorb TL830										
Material =		GAC		Geldarts: B		A =		0.0025		
D =		0.057		[m]		dp.min		dp.max		
d10_ij =		1.17		[mm]		0.94		1.44		
Tavg =		11		[°C]				[m²]		
pwet =		1521		[kg/m³]				dp/D =		0.02
mwet =		1.08		[kg]				Off-set(ΔP) = -2		[mbar]
L0 =		0.52		[m]				ΔPmax =		1.38
Lmf =		0.55		[m]				Vm (ε=0) =		0.71
								Lm =		0.27
								vmf =		28.2
								ε0 =		0.46
								εmf =		0.49
										[m³/m³]
Status bed										
Temperature		Water flow		Bed height		Pressure difference		Temperature		Velocity
T		Qw		L		ΔP(399cm)		T (interp.)		vs
[°C]		[L/h]		[m]		[mbar]		[°C]		[m/s]
						Hydrostatic				Voidage
						[cm H2O]				ε
[0/1/2/3]		0		0.52		-0.5		10		0
0		10		0.52		3		10		0.001
0		10		20		4.1		10		0.002
0		10		30		5.2		10		0.003
0		10		45		8.4		10		0.004
0		10		60		11.3		10		0.006
0		10		67		12.7		10		0.007
1		10		74		12.5		10		0.008
1		11		80		13.2		11		0.008
1		11		91		13.4		11		0.009
1		11		101		13.6		11		0.01
1		11		112		13.2		11		0.012
1		11		121		13.1		11		0.013
1		11		130		13.6		11		0.014
1		11		136		13.4		11		0.014
1		11		147		13.8		11		0.016
1		11		162		13.3		11		0.017
1		11		175		13.7		11		0.019
1		11		186		13.4		11		0.02
1		12		191		13.5		12		0.02
1		11		204		13.5		11		0.022
1		11		236		13.5		11		0.025
1		11		254		13.6		11		0.027
L-S Fluidisation experiment nr.: 63 Filtrasorb TL830										
Material =		GAC		Geldarts: B		A =		0.0025		
D =		0.057		[m]		dp.min		dp.max		
d10_ij =		1.17		[mm]		0.94		1.44		
Tavg =		22.1		[°C]				[m²]		
pwet =		1521		[kg/m³]				dp/D =		0.02
mwet =		1.08		[kg]				Off-set(ΔP) = -2		[mbar]
L0 =		0.52		[m]				ΔPmax =		1.34
Lmf =		0.56		[m]				Vm (ε=0) =		0.71
								Lm =		0.27
								vmf =		34
								ε0 =		0.46
								εmf =		0.5
										[m³/m³]
Status bed										
Temperature		Water flow		Bed height		Pressure difference		Temperature		Velocity
T		Qw		L		ΔP(399cm)		T (interp.)		vs
[°C]		[L/h]		[m]		[mbar]		[°C]		[m/s]
						Hydrostatic				Voidage
						[cm H2O]				ε
[0/1/2/3]		0		0.52		-0.5		23		0
0		23		10		0.52		23		0.001
0		23		20		0.52		23		0.002
0		23		25		0.52		23		0.002
0		23		30		0.52		23		0.003
0		23		50		0.52		23		0.005
0		23		70		0.53		23		0.007
0		23		82		0.54		23		0.008
1		23		92		0.56		23		0.01
1		23		100		0.58		23		0.01
1		23		118		0.63		23		0.012
1		22		137		0.68		22		0.014
1		22		147		0.71		22		0.016
1		22		158		0.73		22		0.017
1		22		164		0.75		22		0.017
1		21		172		0.78		21		0.018
1		22		186		0.82		22		0.02
1		22		198		0.85		22		0.021
1		22		202		0.87		22		0.021
1		22		212		0.9		22		0.023
1		22		225		0.96		22		0.024
1		22		233		0.98		22		0.025
1		22		258		1.09		22		0.028
L-S Fluidisation experiment nr.: 64 Filtrasorb TL830										
Material =		GAC		Geldarts: B		A =		0.0025		
D =		0.057		[m]		dp.min		dp.max		
d10_ij =		1.17		[mm]		0.94		1.44		
Tavg =		31.3		[°C]				[m²]		
pwet =		1521		[kg/m³]				dp/D =		0.02
mwet =		1.08		[kg]				Off-set(ΔP) = -2.5		[mbar]
L0 =		0.52		[m]				ΔPmax =		1.3
Lmf =		0.53		[m]				Vm (ε=0) =		0.71
								Lm =		0.27
								vmf =		31.3
								ε0 =		0.46
								εmf =		0.47
										[m³/m³]
Status bed										
Temperature		Water flow		Bed height		Pressure difference		Temperature		Velocity
T		Qw		L		ΔP(399cm)		T (interp.)		vs
[°C]		[L/h]		[m]		[mbar]		[°C]		[m/s]
						Hydrostatic				Voidage
						[cm H2O]				ε
[0/1/2/3]		0		0.52		-1		33		0
0		33		10		0.52		33		0.001
0		33		20		0.52		33		0.002
0		33		30		0.52		33		0.003
0		33		36		0.52		33		0.003
0		33		53		0.52		33		0.005
0		33		73		0.53		33		0.007
1		33		81		0.54		33		0.008
1		33		91		0.55		33		0.009
1		32		100		0.57		32		0.01
1		32		111		0.59		32		0.012
1		32		124		0.62		32		0.013
1		32		133		0.64		32		0.014
1		32		147		0.68		32		0.016
1		32		169		0.73		32		0.018
1		32		177		0.75		32		0.019
1		31		196		0.81		31		0.021
1		31		201		0.83		31		0.021
1		30		209		0.85		30		0.022
1		30		220		0.88		30		0.023
1		30		229		0.93		30		0.024

1	30	243	0.98	12.9	10.3	30	0.026	0.71	1.29	1.03
1	30	263	1.07	12.7	10.1	30	0.028	0.73	1.27	1.01
L-S Fluidisation experiment nr.: 65 Aquasorb K-6300										
Material =	GAC	Geldarts: D				A =	0.0025	[m²]		
D =	0.057	[m]	dp,min	dp,max		dp/D =	0.029	[-]		
d10_ij =	1.68	[mm]	1.41	2.01		Off-set(ΔP) =	-3.003575519	[mbar]		
Tavg =	12	[°C]				ΔPmax =	1.33	[kPa]		
pwet =	1484	[kg/m³]				Vm (ε=0) =	0.7	[L]		
mwet =	1.05	[kg]				Lm =	0.27	[m]		
L0 =	0.53	[m]				vmf =	25.4	[m/h]		
Lmf =	0.55	[m]				ε0 =	0.47	[m³/m³]		
						εmf =	0.49	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
[0/1/2/3]	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
0	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	11	0	0.53	-1	-1	11	0	0.47	-0.1	-0.1
0	11	19	0.53	4.1	1	11	0.001	0.47	0.41	0.1
0	11	20	0.53	5.1	2	11	0.002	0.47	0.51	0.2
0	11	30	0.53	8.2	5	11	0.003	0.47	0.82	0.5
0	11	45	0.53	9.2	6.1	11	0.004	0.48	0.92	0.61
0	11	54	0.54	10.9	7.8	11	0.005	0.49	1.09	0.78
0	11	60	0.55	12.1	9	11	0.006	0.49	1.21	0.9
1	11	70	0.56	12.4	9.3	11	0.007	0.5	1.24	0.93
1	11	81	0.6	13	9.9	11	0.008	0.53	1.3	0.99
1	12	92	0.63	13.2	10.1	12	0.01	0.56	1.32	1.01
1	12	103	0.67	13.3	10.2	12	0.011	0.58	1.33	1.02
1	12	109	0.68	13	9.9	12	0.011	0.59	1.3	0.99
1	12	121	0.72	13.3	10.2	12	0.013	0.61	1.33	1.02
1	12	137	0.78	13.1	10	12	0.014	0.64	1.31	1
1	12	144	0.81	13.1	10	12	0.015	0.65	1.31	1
1	12	151	0.84	13	9.9	12	0.016	0.67	1.3	0.99
1	12	157	0.88	13	9.9	12	0.017	0.68	1.3	0.99
1	12	162	0.9	13.1	10	12	0.017	0.69	1.31	1
1	12	169	0.93	12.9	9.9	12	0.018	0.7	1.29	0.99
1	12	175	0.94	13	10	12	0.019	0.7	1.3	1
1	12	183	0.97	13.3	10.3	12	0.019	0.71	1.33	1.03
1	12	189	1	13.2	10.2	12	0.02	0.72	1.32	1.02
1	13	199	1.07	13.2	10.1	13	0.021	0.74	1.32	1.01
1	13	210	1.12	13.3	10.2	13	0.022	0.75	1.33	1.02
L-S Fluidisation experiment nr.: 66 Aquasorb K-6300										
Material =	GAC	Geldarts: D				A =	0.0025	[m²]		
D =	0.057	[m]	dp,min	dp,max		dp/D =	0.029	[-]		
d10_ij =	1.68	[mm]	1.41	2.01		Off-set(ΔP) =	-3	[mbar]		
Tavg =	22.5	[°C]				ΔPmax =	1.3	[kPa]		
pwet =	1484	[kg/m³]				Vm (ε=0) =	0.7	[L]		
mwet =	1.05	[kg]				Lm =	0.27	[m]		
L0 =	0.53	[m]				vmf =	27.4	[m/h]		
Lmf =	0.55	[m]				ε0 =	0.47	[m³/m³]		
						εmf =	0.49	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
[0/1/2/3]	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
0	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	23	0	0.53	-1	-1	23	0	0.47	-0.1	-0.1
0	23	10	0.53	3.1	0	23	0.001	0.47	0.31	0
0	23	20	0.53	3.6	0.5	23	0.002	0.47	0.36	0.05
0	23	25	0.53	4.1	1	23	0.002	0.47	0.41	0.1
0	23	30	0.54	5.2	2.1	23	0.003	0.48	0.52	0.21
0	23	37	0.53	6.2	3.1	23	0.004	0.48	0.62	0.31
0	23	48	0.53	8	4.8	23	0.005	0.48	0.8	0.48
0	23	53	0.53	8.8	5.6	23	0.005	0.48	0.88	0.56
0	23	60	0.54	9.7	6.6	23	0.006	0.48	0.97	0.66
1	23	71	0.55	11.1	8	23	0.007	0.5	1.11	0.8
1	24	80	0.57	11.8	8.7	24	0.008	0.51	1.18	0.87
1	23	95	0.6	12	8.9	23	0.01	0.53	1.2	0.89
1	23	107	0.63	12.6	9.4	23	0.011	0.56	1.26	0.94
1	23	112	0.66	12.2	9.1	23	0.012	0.58	1.22	0.91
1	23	120	0.67	12.3	9.2	23	0.013	0.58	1.23	0.92
1	23	137	0.71	12.4	9.3	23	0.014	0.61	1.24	0.93
1	23	151	0.77	12.4	9.3	23	0.016	0.64	1.24	0.93
1	23	158	0.81	12.7	9.6	23	0.017	0.65	1.27	0.96
1	23	174	0.86	12.7	9.6	23	0.018	0.67	1.27	0.96
1	23	181	0.89	12.8	9.7	23	0.019	0.68	1.28	0.97
1	21	190	0.95	12.7	9.6	21	0.02	0.7	1.27	0.96
1	23	204	1	12.7	9.6	23	0.022	0.72	1.27	0.96
1	23	211	1.05	12.6	9.5	23	0.022	0.73	1.26	0.95
1	21	219	1.07	13	9.9	21	0.023	0.74	1.3	0.99
1	21	231	1.1	13	9.9	21	0.025	0.74	1.3	0.99
1	21	241	1.25	13	9.9	21	0.026	0.77	1.3	0.99
1	21	252	1.4	13	10	21	0.027	0.8	1.3	1
L-S Fluidisation experiment nr.: 67 Aquasorb K-6300										
Material =	GAC	Geldarts: D				A =	0.0025	[m²]		
D =	0.057	[m]	dp,min	dp,max		dp/D =	0.029	[-]		
d10_ij =	1.68	[mm]	1.41	2.01		Off-set(ΔP) =	-3.5	[mbar]		
Tavg =	33.8	[°C]				ΔPmax =	1.27	[kPa]		
pwet =	1484	[kg/m³]				Vm (ε=0) =	0.7	[L]		
mwet =	1.05	[kg]				Lm =	0.27	[m]		
L0 =	0.53	[m]				vmf =	39.1	[m/h]		
Lmf =	0.6	[m]				ε0 =	0.47	[m³/m³]		
						εmf =	0.53	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
[0/1/2/3]	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
0	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	35	0	0.53	-1.5	-1.5	35	0	0.47	-0.15	-0.15
0	35	10	0.53	3.1	-0.5	35	0.001	0.47	0.31	-0.05
0	35	20	0.53	4.1	0.5	35	0.002	0.47	0.41	0.05
0	35	25	0.53	4.6	1	35	0.002	0.47	0.46	0.1
0	35	29	0.53	4.6	1	35	0.003	0.47	0.46	0.1
0	36	49	0.53	7.5	3.8	36	0.005	0.47	0.75	0.38
0	35	65	0.53	9.7	6	35	0.007	0.48	0.97	0.6
0	36	82	0.55	10.5	6.8	36	0.008	0.5	1.05	0.68
0	35	95	0.58	11	7.3	35	0.01	0.52	1.1	0.73
1	35	105	0.6	11.2	7.5	35	0.011	0.53	1.12	0.75
1	36	111	0.61	11.4	7.7	36	0.012	0.54	1.14	0.77
1	35	118	0.63	11.5	7.8	35	0.012	0.56	1.15	0.78
1	35	127	0.65	11.6	7.9	35	0.013	0.57	1.16	0.79
1	35	136	0.68	11.6	8	35	0.014	0.59	1.16	0.8
1	35	152	0.71	11.5	7.9	35	0.016	0.61	1.15	0.79
1	35	163	0.75	11.8	8.2	35	0.017	0.63	1.18	0.82
1	34	178	0.81	12	8.3	34	0.019	0.65	1.2	0.83
1	34	184	0.84	12	8.3	34	0.02	0.67	1.2	0.83
1	34	200	0.89	12.1	8.4	34	0.021	0.68	1.21	0.84
1	33	210	0.94	12.1	8.5	33	0.022	0.7	1.21	0.85
1	33	220	1	12.1	8.5	33	0.023	0.72	1.21	0.85
1	32	233	1.06	12.4	8.8	32	0.025	0.73	1.24	0.88
1	32	242	1.09	12.4	8.8	32	0.026	0.74	1.24	0.88
1	32	254	1.15	12.5	8.9	32	0.027	0.75	1.25	0.89
1	32	269	1.35	12.7	9.1	32	0.029	0.79	1.27	0.91
L-S Fluidisation experiment nr.: 68 Resorb HC										
Material =	GAC	Geldarts: B				A =	0.0025	[m²]		
D =	0.057	[m]	dp,min	dp,max		dp/D =	0.026	[-]		
d10_ij =	1.51	[mm]	1.25	1.82		Off-set(ΔP) =	-1.25	[mbar]		
Tavg =	16.9	[°C]				ΔPmax =	1.13	[kPa]		
						Vm (ε=0) =	0.82	[L]		

pwet =	1359	[kg/m³]				Lm =	0.32	[m]			
mwet =	1.12	[kg]				vmf =	25	[m/h]			
L0 =	0.55	[m]				ε0 =	0.41	[m³/m³]			
Lmf =	0.6	[m]				εmf =	0.46	[m³/m³]			
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference		
[0/1/2/3]	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic	
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]	
0	16	0	0.55	-0.5	-0.5	16	0	0.41	-0.05	-0.05	
0	16	10	0.55	2.3	1	16	0.001	0.41	0.23	0.1	
0	16	20	0.55	3.3	2	16	0.002	0.41	0.33	0.2	
0	16	30	0.55	4.3	3	16	0.003	0.41	0.43	0.3	
0	16	38	0.55	6.9	5.6	16	0.004	0.41	0.69	0.56	
0	16	61	0.58	10.1	8.8	16	0.006	0.44	1.01	0.88	
1	17	67	0.6	10.8	9.5	17	0.007	0.46	1.08	0.95	
1	16	77	0.63	10.9	9.6	16	0.008	0.48	1.09	0.96	
1	17	82	0.65	10.2	8.9	17	0.008	0.5	1.02	0.89	
1	17	100	0.7	11.3	10	17	0.01	0.54	1.13	1	
1	17	111	0.73	10.9	9.6	17	0.012	0.55	1.09	0.96	
1	17	115	0.75	11	9.7	17	0.012	0.56	1.1	0.97	
1	17	127	0.81	11	9.7	17	0.013	0.6	1.1	0.97	
1	17	139	0.83	11.1	9.8	17	0.015	0.61	1.11	0.98	
1	17	142	0.87	11.1	9.8	17	0.015	0.63	1.11	0.98	
1	17	157	0.93	10.9	9.6	17	0.017	0.65	1.09	0.96	
1	17	166	0.95	10.9	9.7	17	0.018	0.66	1.09	0.97	
1	17	174	1	10.9	9.6	17	0.018	0.67	1.09	0.96	
1	17	184	1.07	11.1	9.8	17	0.02	0.69	1.11	0.98	
1	17	200	1.16	10.7	9.4	17	0.021	0.72	1.07	0.94	
1	17	213	1.24	11	9.7	17	0.023	0.73	1.1	0.97	
1	17	219	1.28	11.1	9.8	17	0.023	0.74	1.11	0.98	
1	17	233	1.39	11.1	9.8	17	0.025	0.76	1.11	0.98	
1	17	238	1.45	11.1	9.8	17	0.025	0.77	1.11	0.98	
1	17	246	1.5	11	9.7	17	0.026	0.78	1.1	0.97	
L-S Fluidisation experiment nr.: 69	Resorb HC					A =	0.0025	[m²]			
Material =	GAC	Geldarts: B				dp/D =	0.026	[-]			
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	-2	[mbar]			
d10_ij =	1.51	[mm]	1.25	1.82		ΔPmax =	1.16	[kPa]			
Tavg =	24.8	[°C]				Vm (ε=0) =	0.82	[L]			
pwet =	1359	[kg/m³]				Lm =	0.32	[m]			
mwet =	1.12	[kg]				vmf =	26	[m/h]			
L0 =	0.55	[m]				ε0 =	0.41	[m³/m³]			
Lmf =	0.59	[m]				εmf =	0.45	[m³/m³]			
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference		
[0/1/2/3]	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic	
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]	
0	25	0	0.55	-1	-1	25	0	0.41	-0.1	-0.1	
0	25	10	0.55	3	1	25	0.001	0.41	0.3	0.1	
0	25	20	0.55	4.1	2	25	0.002	0.41	0.41	0.2	
0	25	30	0.55	6.1	4	25	0.003	0.41	0.61	0.4	
0	25	40	0.55	6.9	4.8	25	0.004	0.41	0.69	0.48	
0	25	55	0.56	9.3	7.3	25	0.005	0.42	0.93	0.73	
0	25	63	0.58	10.4	8.3	25	0.006	0.44	1.04	0.83	
1	25	70	0.59	10.4	8.4	25	0.007	0.45	1.04	0.84	
1	25	79	0.61	11	8.9	25	0.008	0.47	1.1	0.89	
1	25	89	0.64	10.9	8.8	25	0.009	0.49	1.09	0.88	
1	25	96	0.67	11.3	9.2	25	0.01	0.52	1.13	0.92	
1	25	105	0.69	11.3	9.2	25	0.011	0.53	1.13	0.92	
1	25	115	0.72	11.3	9.2	25	0.012	0.55	1.13	0.92	
1	25	122	0.73	11.2	9.1	25	0.013	0.56	1.12	0.91	
1	25	126	0.76	11.1	9	25	0.013	0.57	1.11	0.9	
1	25	135	0.78	11.4	9.3	25	0.014	0.58	1.14	0.93	
1	25	154	0.85	11.3	9.3	25	0.016	0.62	1.13	0.93	
1	25	163	0.88	11.4	9.4	25	0.017	0.63	1.14	0.94	
1	25	172	0.93	11.5	9.4	25	0.018	0.65	1.15	0.94	
1	25	180	0.98	11.6	9.5	25	0.019	0.66	1.16	0.95	
1	25	196	1.06	11.5	9.4	25	0.021	0.69	1.15	0.94	
1	25	216	1.17	11.5	9.4	25	0.023	0.72	1.15	0.94	
1	25	224	1.19	11.5	9.4	25	0.024	0.72	1.15	0.94	
1	25	235	1.29	11.5	9.5	25	0.025	0.74	1.15	0.95	
1	24	244	1.38	11.5	9.5	24	0.026	0.76	1.15	0.95	
1	24	253	1.42	11.4	9.4	24	0.027	0.77	1.14	0.94	
L-S Fluidisation experiment nr.: 70	Resorb HC					A =	0.0025	[m²]			
Material =	GAC	Geldarts: B				dp/D =	0.026	[-]			
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	-2	[mbar]			
d10_ij =	1.51	[mm]	1.25	1.82		ΔPmax =	1.14	[kPa]			
Tavg =	29	[°C]				Vm (ε=0) =	0.82	[L]			
pwet =	1359	[kg/m³]				Lm =	0.32	[m]			
mwet =	1.12	[kg]				vmf =	27.4	[m/h]			
L0 =	0.55	[m]				ε0 =	0.41	[m³/m³]			
Lmf =	0.58	[m]				εmf =	0.44	[m³/m³]			
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference		
[0/1/2/3]	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic	
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]	
0	30	0	0.55	-1.2	-1.2	30	0	0.41	-0.12	-0.12	
0	30	10	0.54	3	1	30	0.001	0.41	0.3	0.1	
0	30	20	0.54	4.1	2	30	0.002	0.41	0.41	0.2	
0	30	30	0.54	6.1	4	30	0.003	0.41	0.61	0.4	
0	30	35	0.54	6.2	4.1	30	0.003	0.41	0.62	0.41	
0	30	52	0.54	7.9	5.8	30	0.005	0.41	0.79	0.58	
0	30	59	0.55	9.1	7	30	0.006	0.41	0.91	0.7	
0	30	63	0.56	9.9	7.7	30	0.006	0.43	0.99	0.77	
1	30	72	0.58	10.1	8	30	0.007	0.44	1.01	0.8	
1	30	92	0.65	10.6	8.5	30	0.01	0.5	1.06	0.85	
1	30	106	0.67	10.8	8.7	30	0.011	0.51	1.08	0.87	
1	30	113	0.7	10.9	8.8	30	0.012	0.54	1.09	0.88	
1	29	131	0.76	10.9	8.8	29	0.014	0.57	1.09	0.88	
1	28	140	0.82	11.4	9.3	28	0.015	0.6	1.14	0.93	
1	28	152	0.84	11.3	9.3	28	0.016	0.61	1.13	0.93	
1	29	161	0.87	10.8	8.7	29	0.017	0.62	1.08	0.87	
1	29	175	0.93	11.3	9.2	29	0.019	0.65	1.13	0.92	
1	28	182	0.98	11.4	9.3	28	0.019	0.67	1.14	0.93	
1	29	195	1.01	11.4	9.3	29	0.021	0.68	1.14	0.93	
1	29	211	1.09	11.2	9	29	0.022	0.7	1.11	0.9	
1	29	220	1.14	11.2	9.1	29	0.023	0.71	1.12	0.91	
1	29	224	1.23	11.2	9.1	29	0.025	0.73	1.12	0.91	
1	29	241	1.29	11.2	9.2	29	0.026	0.74	1.12	0.92	
1	29	249	1.34	11.2	9.2	29	0.027	0.75	1.12	0.92	
L-S Fluidisation experiment nr.: 71	Norit GAC 830 Supra					A =	0.0025	[m²]			
Material =	GAC	Geldarts: B				dp/D =	0.02	[-]			
D =	0.057	[m]	dp,min	dp,max		Off-set(ΔP) =	-3.5	[mbar]			
d10_ij =	1.17	[mm]	0.94	1.44		ΔPmax =	1.28	[kPa]			
Tavg =	12.7	[°C]				Vm (ε=0) =	0.76	[L]			
pwet =	1449	[kg/m³]				Lm =	0.29	[m]			
mwet =	1.1	[kg]				vmf =	25.8	[m/h]			
L0 =	0.54	[m]				ε0 =	0.45	[m³/m³]			
Lmf =	0.63	[m]				εmf =	0.52	[m³/m³]			
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference		
[0/1/2/3]	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic	
	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]	
0	12	0	0.54	-1.5	-1.5	12	0	0.45	-0.15	-0.15	

0	12	10	0.55	4.1	0.5	12	0.001	0.46	0.41	0.05
0	12	20	0.55	5.6	2	12	0.002	0.46	0.56	0.2
0	12	30	0.55	6.6	3	12	0.003	0.46	0.66	0.3
0	12	33	0.56	8.7	5	12	0.003	0.47	0.87	0.5
0	13	56	0.6	10.4	6.7	13	0.006	0.5	1.04	0.67
0	12	65	0.61	11.9	8.3	12	0.007	0.51	1.19	0.83
1	12	71	0.63	12	8.4	12	0.007	0.53	1.2	0.84
1	12	85	0.69	12.4	8.8	12	0.009	0.57	1.24	0.88
1	12	88	0.72	12.5	8.9	12	0.009	0.59	1.25	0.89
1	12	98	0.76	12.4	8.8	12	0.01	0.61	1.24	0.88
1	13	113	0.81	12.5	8.9	13	0.012	0.63	1.25	0.89
1	13	122	0.85	12.5	8.9	13	0.013	0.65	1.25	0.89
1	13	128	0.89	12.3	8.7	13	0.013	0.66	1.23	0.87
1	13	144	0.98	12.4	8.9	13	0.015	0.69	1.24	0.89
1	13	152	1.05	12.4	8.8	13	0.016	0.71	1.24	0.88
1	13	168	1.13	12.4	8.8	13	0.018	0.73	1.24	0.88
1	13	175	1.18	12.8	9.2	13	0.019	0.74	1.28	0.92
1	13	184	1.25	12.4	8.8	13	0.02	0.76	1.24	0.88
1	13	190	1.3	12.7	9.1	13	0.02	0.77	1.27	0.91
1	13	200	1.38	12.5	8.9	13	0.021	0.78	1.25	0.89
1	13	214	1.57	12.8	9.3	13	0.023	0.81	1.28	0.93
1	13	225	1.65	12.7	9.2	13	0.024	0.81	1.27	0.92
L-S Fluidisation experiment nr.: 72 Norit GAC 830 Supra										
Material =	GAC	Geldarts: B				A =	0.0025	[m²]		
D =	0.057	[m]	dp,min	dp,max		dp/D =	0.02	[-]		
d10_ij =	1.17	[mm]				Off-set(ΔP) =	-3.5	[mbar]		
Tavg =	23.6	[°C]				ΔPmax =	1.25	[kPa]		
pwet =	1449	[kg/m³]				Vm (ε=0) =	0.76	[L]		
mwet =	1.1	[kg]				Lm =	0.29	[m]		
L0 =	0.54	[m]				vmf =	26.2	[m/h]		
Lmf =	0.59	[m]				ε0 =	0.45	[m³/m³]		
						εmf =	0.49	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	24	0	0.54	-1.5	-1.5	24	0	0.45	-0.15	-0.15
0	24	10	0.54	4.6	1	24	0.001	0.45	0.46	0.1
0	24	20	0.54	7.7	3.6	24	0.002	0.45	0.72	0.36
0	24	30	0.55	7.7	4	24	0.003	0.46	0.77	0.4
0	24	32	0.54	7.9	4.2	24	0.003	0.45	0.79	0.42
0	24	41	0.55	9.9	6.2	24	0.004	0.46	0.99	0.62
0	24	57	0.57	11.1	7.5	24	0.006	0.48	1.11	0.75
1	24	77	0.6	11.7	8	24	0.008	0.5	1.17	0.8
1	26	79	0.65	12.4	8.7	26	0.008	0.54	1.24	0.87
1	24	91	0.66	11.9	8.2	24	0.009	0.55	1.19	0.82
1	23	106	0.72	12.5	8.9	23	0.011	0.58	1.25	0.89
1	24	112	0.75	12	8.4	24	0.012	0.6	1.2	0.84
1	23	124	0.79	12.5	8.9	23	0.013	0.62	1.25	0.89
1	24	136	0.86	12	8.4	24	0.014	0.65	1.2	0.84
1	24	146	0.89	12	8.4	24	0.015	0.66	1.2	0.84
1	24	155	0.93	12	8.4	24	0.016	0.68	1.2	0.84
1	24	166	1.01	12	8.4	24	0.018	0.7	1.2	0.84
1	24	174	1.03	12	8.4	24	0.018	0.71	1.2	0.84
1	23	180	1.05	11.9	8.3	23	0.019	0.71	1.19	0.83
1	23	189	1.13	12.4	8.8	23	0.02	0.73	1.24	0.88
1	23	202	1.24	12.1	8.5	23	0.021	0.75	1.21	0.85
1	23	212	1.3	12.4	8.8	23	0.023	0.77	1.24	0.88
1	23	221	1.37	12.3	8.7	23	0.024	0.78	1.23	0.87
1	23	230	1.5	12.3	8.8	23	0.025	0.8	1.23	0.88
L-S Fluidisation experiment nr.: 73 Norit GAC 830 Supra										
Material =	GAC	Geldarts: B				A =	0.0025	[m²]		
D =	0.057	[m]	dp,min	dp,max		dp/D =	0.02	[-]		
d10_ij =	1.17	[mm]				Off-set(ΔP) =	-4	[mbar]		
Tavg =	30.7	[°C]				ΔPmax =	1.28	[kPa]		
pwet =	1449	[kg/m³]				Vm (ε=0) =	0.76	[L]		
mwet =	1.1	[kg]				Lm =	0.29	[m]		
L0 =	0.54	[m]				vmf =	27.4	[m/h]		
Lmf =	0.58	[m]				ε0 =	0.45	[m³/m³]		
						εmf =	0.49	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	33	0	0.54	-2	-2	33	0	0.45	-0.2	-0.2
0	33	10	0.54	5.1	1	33	0.001	0.45	0.51	0.1
0	33	20	0.54	6.1	2	33	0.002	0.45	0.61	0.2
0	33	30	0.54	8.2	4	33	0.003	0.45	0.82	0.4
0	33	53	0.56	10	5.8	33	0.005	0.47	1	0.58
0	33	64	0.57	10.7	6.5	33	0.006	0.47	1.07	0.65
1	33	72	0.59	11.5	7.3	33	0.007	0.49	1.15	0.73
1	33	85	0.62	12	7.8	33	0.009	0.52	1.2	0.78
1	32	94	0.65	11.9	7.7	32	0.01	0.54	1.19	0.77
1	32	105	0.68	11.9	7.7	32	0.011	0.56	1.19	0.77
1	31	110	0.72	12	7.9	31	0.011	0.58	1.2	0.79
1	31	123	0.74	12.2	8.1	31	0.013	0.6	1.22	0.81
1	30	138	0.8	12	7.9	30	0.015	0.63	1.2	0.79
1	30	152	0.9	12.5	8.3	30	0.016	0.67	1.25	0.83
1	30	162	0.91	12.3	8.1	30	0.017	0.67	1.23	0.81
1	30	172	0.95	12.6	8.4	30	0.018	0.68	1.26	0.84
1	30	186	0.99	12.3	8.2	30	0.02	0.69	1.23	0.82
1	30	191	1.04	12.5	8.4	30	0.02	0.71	1.25	0.84
1	30	202	1.09	12.3	8.2	30	0.021	0.72	1.23	0.82
1	30	215	1.2	12.4	8.3	30	0.023	0.75	1.24	0.83
1	30	221	1.3	12.8	8.7	30	0.024	0.77	1.28	0.87
1	30	230	1.4	12.6	8.5	30	0.025	0.78	1.26	0.85
1	30	243	1.44	12.6	8.5	30	0.026	0.79	1.26	0.85
L-S Fluidisation experiment nr.: 74 Saratech Spherical										
Material =	GAC	Geldarts: A				A =	0.0025	[m²]		
D =	0.057	[m]	dp,min	dp,max		dp/D =	0.007	[-]		
d10_ij =	0.4	[mm]				Off-set(ΔP) =	-1.5	[mbar]		
Tavg =	10.9	[°C]				ΔPmax =	1.12	[kPa]		
pwet =	1388	[kg/m³]				Vm (ε=0) =	0.76	[L]		
mwet =	1.06	[kg]				Lm =	0.29	[m]		
L0 =	0.52	[m]				vmf =	10.9	[m/h]		
Lmf =	0.62	[m]				ε0 =	0.42	[m³/m³]		
						εmf =	0.51	[m³/m³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference		Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic	T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]	[°C]	[m/s]	[m³/m³]	[kPa]	[kPa]
0	10	0	0.52	0	0	10	0	0.42	0	0
0	10	10	0.52	4.6	3	10	0.001	0.42	0.46	0.3
0	10	20	0.52	7.6	6.1	10	0.002	0.42	0.76	0.61
1	10	28	0.62	11	9.5	10	0.003	0.51	1.1	0.95
1	11	35	0.63	11	9.5	11	0.003	0.52	1.1	0.95
1	11	43	0.79	10.9	9.4	11	0.004	0.62	1.09	0.94
1	11	47	0.84	10.9	9.4	11	0.005	0.64	1.09	0.94
1	11	51	0.87	10.9	9.4	11	0.005	0.65	1.09	0.94
1	11	58	0.94	10.9	9.4	11	0.006	0.68	1.09	0.94
1	11	61	1.03	10.9	9.4	11	0.006	0.7	1.09	0.94
1	11	64	1.07	11.2	9.6	11	0.006	0.72	1.12	0.96
1	11	69	1.24	11.1	9.6	11	0.007	0.75	1.11	0.96
1	11	83	1.46	10.8	9.3	11	0.009	0.79	1.08	0.93
1	11	90	1.53	11.1	9.6	11	0.009	0.8	1.11	0.96
1	11	96	1.73	11.1	9.6	11	0.01	0.82	1.11	0.96

1	11	110	2.99	11	9.5		11	0.011	0.89	1.1	0.95
L-S Fluidisation experiment nr.: 75 Saratech Spherical						A =	0.0025	[m ²]			
Material =	GAC	Geldarts: A					dp/D =	0.007	[-]		
D =	0.057	[m]	dp,min	dp,max			Off-set(ΔP) =	-1.5	[mbar]		
d10_ij =	0.4	[mm]					ΔPmax =	1.1	[kPa]		
Tavg =	11.3	[°C]					Vm (ε=0) =	0.76	[L]		
pwet =	1388	[kg/m ³]					Lm =	0.29	[m]		
mwet =	1.05	[kg]					vmf =	14.1	[m/h]		
L0 =	0.52	[m]					ε0 =	0.42	[m ³ /m ³]		
Lmf =	0.7	[m]					εmf =	0.57	[m ³ /m ³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference			Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic		T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]		[°C]	[m/s]	[m ³ /m ³]	[kPa]	[kPa]
0	11	0	0.52	-0.8	-0.8		11	0	0.42	-0.08	-0.08
0	11	10	0.52	4.6	3		11	0.001	0.42	0.46	0.3
0	11	20	0.52	7.6	6.1		11	0.002	0.42	0.76	0.61
1	11	38	0.75	10.9	9.3		11	0.004	0.6	1.09	0.93
1	11	45	0.92	11	9.5		11	0.004	0.67	1.1	0.95
1	11	55	0.94	10.9	9.4		11	0.005	0.68	1.09	0.94
1	11	63	1.01	10.9	9.4		11	0.006	0.7	1.09	0.94
1	11	72	1.35	10.9	9.4		11	0.007	0.77	1.09	0.94
1	12	92	1.56	10.9	9.4		12	0.01	0.8	1.09	0.94
1	12	105	2.04	10.9	9.4		12	0.011	0.85	1.09	0.94
1	12	110	2.36	11	9.4		12	0.011	0.87	1.1	0.94
L-S Fluidisation experiment nr.: 76 Saratech Spherical						A =	0.0025	[m ²]			
Material =	GAC	Geldarts: A					dp/D =	0.007	[-]		
D =	0.057	[m]	dp,min	dp,max			Off-set(ΔP) =	-1.5	[mbar]		
d10_ij =	0.4	[mm]					ΔPmax =	1.1	[kPa]		
Tavg =	25.9	[°C]					Vm (ε=0) =	0.76	[L]		
pwet =	1388	[kg/m ³]					Lm =	0.29	[m]		
mwet =	1.05	[kg]					vmf =	19.5	[m/h]		
L0 =	0.52	[m]					ε0 =	0.42	[m ³ /m ³]		
Lmf =	0.64	[m]					εmf =	0.53	[m ³ /m ³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference			Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic		T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]		[°C]	[m/s]	[m ³ /m ³]	[kPa]	[kPa]
0	27	0	0.52	-1.1	-1.1		27	0	0.42	-0.11	-0.11
0	27	10	0.52	2.5	1		27	0.001	0.42	0.25	0.1
0	27	20	0.52	3.6	2		27	0.002	0.42	0.36	0.2
0	27	37	0.65	6.6	5		27	0.004	0.54	0.66	0.5
1	23	51	0.84	10.2	8.7		23	0.005	0.64	1.02	0.87
1	27	57	0.9	10.3	8.7		27	0.006	0.66	1.03	0.87
1	28	66	1.1	10.4	8.8		28	0.007	0.73	1.04	0.88
1	28	72	1.11	11	9.4		28	0.007	0.73	1.1	0.94
1	28	83	1.26	10.3	8.8		28	0.009	0.76	1.03	0.88
1	27	90	1.31	10.4	8.9		27	0.009	0.77	1.04	0.89
1	27	96	1.42	10.3	8.8		27	0.01	0.79	1.03	0.88
1	27	100	1.59	10.3	8.8		27	0.01	0.81	1.03	0.88
1	24	108	1.79	10.3	8.8		24	0.011	0.83	1.03	0.88
1	23	112	2.02	10.9	9.3		23	0.012	0.85	1.09	0.93
1	23	119	2.8	10.8	9.3		23	0.012	0.89	1.08	0.93
L-S Fluidisation experiment nr.: 77 Saratech Spherical						A =	0.0025	[m ²]			
Material =	GAC	Geldarts: A					dp/D =	0.007	[-]		
D =	0.057	[m]	dp,min	dp,max			Off-set(ΔP) =	-1.5	[mbar]		
d10_ij =	0.4	[mm]					ΔPmax =	1.15	[kPa]		
Tavg =	35.5	[°C]					Vm (ε=0) =	0.76	[L]		
pwet =	1388	[kg/m ³]					Lm =	0.29	[m]		
mwet =	1.05	[kg]					vmf =	14.4	[m/h]		
L0 =	0.52	[m]					ε0 =	0.42	[m ³ /m ³]		
Lmf =	0.67	[m]					εmf =	0.55	[m ³ /m ³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference			Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic		T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]		[°C]	[m/s]	[m ³ /m ³]	[kPa]	[kPa]
0	35	0	0.52	-0.6	-0.6		35	0	0.43	-0.06	-0.06
0	35	10	0.52	4.6	3		35	0.001	0.43	0.46	0.3
0	35	29	0.63	7.6	6		35	0.003	0.52	0.76	0.6
1	35	38	0.69	11.2	9.6		35	0.004	0.57	1.12	0.96
1	36	42	0.71	11.5	9.9		36	0.004	0.58	1.15	0.99
1	36	44	0.73	10.7	9.1		36	0.004	0.59	1.07	0.91
1	36	49	0.77	10.7	9.1		36	0.005	0.61	1.07	0.91
1	36	58	0.84	10.7	9.1		36	0.006	0.64	1.07	0.91
1	36	63	0.88	11.1	9.5		36	0.006	0.66	1.11	0.95
1	36	67	0.94	11.1	9.5		36	0.007	0.68	1.11	0.95
1	36	76	1.02	11.1	9.5		36	0.008	0.7	1.11	0.95
1	36	80	1.11	11.1	9.5		36	0.008	0.73	1.11	0.95
1	34	90	1.29	11	9.5		34	0.009	0.77	1.1	0.95
1	36	97	1.39	11	9.4		36	0.01	0.78	1.1	0.94
1	35	103	1.59	10.5	8.9		35	0.011	0.81	1.05	0.89
1	35	114	1.74	10.5	8.9		35	0.012	0.82	1.05	0.89
1	35	137	2.51	10.5	8.9		35	0.014	0.88	1.05	0.89
L-S Fluidisation experiment nr.: 78 Norit ROW 0.8 Supra						A =	0.0025	[m ²]			
Material =	GAC	Geldarts: B					dp/D =	0.02	[-]		
D =	0.057	[m]	dp,min	dp,max			Off-set(ΔP) =	-3	[mbar]		
d10_ij =	1.15	[mm]	0.84	1.56			ΔPmax =	1.15	[kPa]		
Tavg =	12.5	[°C]					Vm (ε=0) =	0.63	[L]		
pwet =	1450	[kg/m ³]					Lm =	0.24	[m]		
mwet =	0.91	[kg]					vmf =	17.2	[m/h]		
L0 =	0.53	[m]					ε0 =	0.53	[m ³ /m ³]		
Lmf =	0.57	[m]					εmf =	0.56	[m ³ /m ³]		
Status bed	Temperature	Water flow	Bed height	Pressure difference			Temperature	Velocity	Voidage	Pressure difference	
	T	Qw	L	ΔP(399cm)	Hydrostatic		T (interp.)	vs	ε	ΔP	Hydrostatic
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[cm H2O]		[°C]	[m/s]	[m ³ /m ³]	[kPa]	[kPa]
0	12	0	0.54	-1.1	-1.1		12	0	0.54	-0.11	-0.11
0	12	10	0.54	4.1	1		12	0.001	0.54	0.41	0.1
0	12	20	0.54	5.1	2		12	0.002	0.54	0.51	0.2
0	12	30	0.54	6.1	3		12	0.003	0.54	0.61	0.3
0	12	41	0.56	9.3	6.2		12	0.004	0.56	0.93	0.62
1	12	47	0.58	10.5	7.4		12	0.005	0.57	1.05	0.74
1	12	50	0.6	10.5	7.4		12	0.005	0.58	1.05	0.74
1	12	54	0.61	10.5	7.4		12	0.005	0.59	1.05	0.74
1	12	64	0.66	10.4	7.3		12	0.006	0.62	1.04	0.73
1	12	77	0.71	10.7	7.6		12	0.008	0.65	1.07	0.76
1	12	85	0.74	10.7	7.6		12	0.009	0.66	1.07	0.76
1	12	105	0.85	10.7	7.6		12	0.011	0.7	1.07	0.76
1	12	110	0.87	11	7.9		12	0.011	0.71	1.1	0.79
1	12	126	0.97	10.9	7.9		12	0.013	0.74	1.09	0.79
1	13	132	1.02	10.9	7.9		13	0.014	0.75	1.09	0.79
1	13	140	1.06	11.2	8.1		13	0.015	0.76	1.12	0.81
1	13	154	1.17	11.2	8.1		13	0.016	0.78	1.12	0.81
1	13	164	1.25	11.3	8.2		13	0.017	0.8	1.13	0.82
1	13	173	1.32	11.4	8.3		13	0.018	0.81	1.14	0.83
1	13	181	1.45	11.3	8.3		13	0.019	0.82	1.13	0.83
1	13	193	1.5	11.5	8.5		13	0.021	0.83	1.15	0.85
1	13	206	1.65	11.5	8.5		13	0.022	0.84	1.15	0.85
1	13	221	1.9	11.5	8.5		13	0.024	0.86	1.15	0.85
L-S Fluidisation experiment nr.: 79 Norit ROW 0.8 Supra						A =	0.0025	[m ²]			
Material =	GAC	Geldarts: B					dp/D =	0.02	[-]		

D =	0.057	[m]	dp.min	dp.max	Off-set(ΔP) = -3	[mbar]		
d10_ij =	1.15	[mm]			ΔP_{max} =	1.11	[kPa]	
Tavg =	20.2	[°C]			Vm ($\epsilon=0$) =	0.63	[L]	
pwet =	1450	[kg/m³]			Lm =	0.24	[m]	
mwet =	0.91	[kg]			vmf =	17.6	[m/h]	
L0 =	0.53	[m]			ϵ_0 =	0.53	[m³/m³]	
Lmf =	0.57	[m]			ϵ_{mf} =	0.56	[m³/m³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference	Temperature	Velocity	Voidage	Pressure difference
	T	Qw	L	$\Delta P(399cm)$	T (interp.)	vs	ϵ	ΔP
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[°C]	[m/s]	[m³/m³]	[kPa]
0	21	0	0.54	-1.2	21	0	0.54	-0.12
0	21	10	0.54	4.1	21	0.001	0.54	0.41
0	21	20	0.54	5.1	21	0.002	0.54	0.51
0	21	30	0.54	6.1	21	0.003	0.54	0.61
0	21	43	0.56	9.9	21	0.004	0.55	0.99
1	21	55	0.59	10.2	21	0.005	0.58	1.02
1	21	62	0.63	10.1	21	0.006	0.6	1.01
1	21	69	0.65	10.1	21	0.007	0.62	1.01
1	21	74	0.67	10.1	21	0.008	0.63	1.01
1	21	83	0.7	10.4	21	0.009	0.64	1.04
1	20	87	0.73	10.7	20	0.009	0.66	1.07
1	20	101	0.78	10.3	20	0.01	0.68	1.03
1	21	105	0.8	10.3	21	0.011	0.69	1.03
1	21	116	0.85	10.3	21	0.012	0.71	1.03
1	21	129	0.92	10.2	21	0.014	0.73	1.02
1	21	144	1	10.2	21	0.015	0.75	1.02
1	20	158	1.11	10.3	20	0.017	0.77	1.03
1	20	164	1.15	10.5	20	0.017	0.78	1.05
1	19	175	1.26	11	19	0.019	0.8	1.1
1	19	195	1.4	10.6	19	0.021	0.82	1.06
1	20	204	1.6	10.7	20	0.022	0.84	1.07
1	20	211	1.65	11	20	0.022	0.84	1.1
1	19	221	1.85	11	19	0.024	0.86	1.1
1	19	233	1.97	11.1	19	0.025	0.87	1.11
L-S Fluidisation experiment nr.: 80	Norit ROW 0.8 Supra				A =	0.0025	[m²]	
Material =	GAC	Geldarts: B			dp/D =	0.02	[-]	
D =	0.057	[mm]	dp.min	dp.max	Off-set(ΔP) = -3	[mbar]		
d10_ij =	1.15	[mm]			ΔP_{max} =	1.04	[kPa]	
Tavg =	31.1	[°C]			Vm ($\epsilon=0$) =	0.63	[L]	
pwet =	1450	[kg/m³]			Lm =	0.24	[m]	
mwet =	0.91	[kg]			vmf =	17.2	[m/h]	
L0 =	0.53	[m]			ϵ_0 =	0.53	[m³/m³]	
Lmf =	0.54	[m]			ϵ_{mf} =	0.54	[m³/m³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference	Temperature	Velocity	Voidage	Pressure difference
	T	Qw	L	$\Delta P(399cm)$	T (interp.)	vs	ϵ	ΔP
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[°C]	[m/s]	[m³/m³]	[kPa]
0	32	0	0.53	-1	32	0	0.53	-0.1
0	32	10	0.53	4.1	32	0.001	0.53	0.41
0	32	20	0.53	5.1	32	0.002	0.53	0.51
0	32	30	0.53	6.1	32	0.003	0.53	0.61
1	33	47	0.55	9.6	33	0.005	0.55	0.96
1	33	51	0.55	9.6	33	0.005	0.55	0.96
1	32	62	0.59	9.6	32	0.006	0.58	0.96
1	32	70	0.62	9.6	32	0.007	0.6	0.96
1	32	76	0.64	9.6	32	0.008	0.61	0.96
1	31	88	0.69	9.5	31	0.009	0.64	0.95
1	33	101	0.73	9.9	33	0.01	0.66	0.99
1	31	116	0.8	9.9	31	0.012	0.69	0.99
1	33	129	0.85	9.9	33	0.014	0.7	0.99
1	31	135	0.89	9.7	31	0.014	0.72	0.97
1	32	145	0.93	10	32	0.015	0.73	1
1	30	156	1	9.7	30	0.016	0.75	0.97
1	32	166	1.07	10.1	32	0.018	0.76	1.01
1	30	176	1.15	10	30	0.019	0.78	1
1	29	183	1.24	10.1	29	0.019	0.79	1.01
1	31	195	1.27	10.4	31	0.021	0.8	1.04
1	29	203	1.36	10.1	29	0.022	0.81	1.01
1	29	213	1.4	10.3	29	0.023	0.82	1.03
1	29	232	1.67	10.3	29	0.025	0.85	1.03
1	30	239	1.72	10.3	30	0.026	0.85	1.03
L-S Fluidisation experiment nr.: 81	Norit RB 4C				A =	0.0025	[m²]	
Material =	GAC	Geldarts: D			dp/D =	0.081	[-]	
D =	0.057	[mm]	dp.min	dp.max	Off-set(ΔP) = -3	[mbar]		
d10_ij =	4.62	[mm]			ΔP_{max} =	1.44	[kPa]	
Tavg =	16	[°C]			Vm ($\epsilon=0$) =	0.73	[L]	
pwet =	1500	[kg/m³]			Lm =	0.28	[m]	
mwet =	1.1	[kg]			vmf =	66.6	[m/h]	
L0 =	0.55	[m]			ϵ_0 =	0.47	[m³/m³]	
Lmf =	0.54	[m]			ϵ_{mf} =	0.47	[m³/m³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference	Temperature	Velocity	Voidage	Pressure difference
	T	Qw	L	$\Delta P(399cm)$	T (interp.)	vs	ϵ	ΔP
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[°C]	[m/s]	[m³/m³]	[kPa]
0	16	0	0.54	-1.5	16	0	0.47	-0.15
0	16	10	0.54	2.4	16	0.001	0.47	0.24
0	16	20	0.54	2.5	16	0.002	0.47	0.25
0	16	30	0.54	2.7	16	0.003	0.47	0.27
0	16	33	0.54	2.8	16	0.003	0.47	0.28
0	16	40	0.54	2.9	16	0.004	0.47	0.29
0	16	60	0.54	4.3	16	0.006	0.47	0.43
0	16	81	0.54	5.8	16	0.008	0.47	0.58
0	16	102	0.54	7.6	16	0.011	0.47	0.76
0	16	123	0.54	9.3	16	0.013	0.47	0.93
1	16	181	0.56	13.3	16	0.019	0.48	1.33
1	16	196	0.58	13.7	16	0.021	0.5	1.37
1	16	235	0.62	14	16	0.025	0.53	1.4
1	16	260	0.65	14.2	16	0.028	0.56	1.42
1	16	290	0.69	14.1	16	0.031	0.58	1.41
1	16	311	0.71	14	16	0.033	0.59	1.4
1	16	332	0.74	14	16	0.036	0.61	1.4
1	16	352	0.77	13.9	16	0.038	0.62	1.39
1	16	388	0.82	13.8	16	0.042	0.65	1.38
1	16	445	0.9	13.5	16	0.048	0.68	1.35
1	16	462	0.93	13.6	16	0.05	0.69	1.36
1	16	610	1.2	14.3	16	0.066	0.76	1.43
1	16	672	1.3	14.1	16	0.073	0.77	1.41
1	16	717	1.45	14.4	16	0.078	0.8	1.44
1	16	825	1.8	14.3	16	0.089	0.84	1.43
L-S Fluidisation experiment nr.: 82	Norit RB 4C				A =	0.0025	[m²]	
Material =	GAC	Geldarts: D			dp/D =	0.081	[-]	
D =	0.057	[mm]	dp.min	dp.max	Off-set(ΔP) = -3	[mbar]		
d10_ij =	4.62	[mm]			ΔP_{max} =	1.41	[kPa]	
Tavg =	24.4	[°C]			Vm ($\epsilon=0$) =	0.72	[L]	
pwet =	1500	[kg/m³]			Lm =	0.28	[m]	
mwet =	1.08	[kg]			vmf =	62.7	[m/h]	
L0 =	0.54	[m]			ϵ_0 =	0.47	[m³/m³]	
Lmf =	0.55	[m]			ϵ_{mf} =	0.48	[m³/m³]	
Status bed	Temperature	Water flow	Bed height	Pressure difference	Temperature	Velocity	Voidage	Pressure difference
	T	Qw	L	$\Delta P(399cm)$	T (interp.)	vs	ϵ	ΔP
[0/1/2/3]	[°C]	[L/h]	[m]	[mbar]	[°C]	[m/s]	[m³/m³]	[kPa]

0	25	0	0.54	-1.5	-1.5	25	0	0.47	-0.15	-0.15	
0	25	10	0.54	2.4	-0.7	25	0.001	0.47	0.24	-0.07	
0	25	20	0.54	2.4	-0.7	25	0.002	0.47	0.24	-0.07	
0	25	30	0.54	2.4	-0.7	25	0.003	0.47	0.24	-0.07	
0	26	38	0.54	2.4	-0.7	26	0.004	0.47	0.24	-0.07	
0	26	53	0.54	2.9	-0.2	26	0.005	0.47	0.29	-0.02	
0	26	68	0.54	4.4	1.3	26	0.007	0.47	0.44	0.13	
0	26	90	0.54	6	2.9	26	0.009	0.47	0.6	0.29	
0	26	125	0.54	9	5.8	26	0.013	0.47	0.9	0.58	
1	26	178	0.55	13.2	10.1	26	0.019	0.49	1.32	1.01	
1	26	202	0.58	13.1	10	26	0.021	0.51	1.31	1	
1	26	245	0.62	13.5	10.3	26	0.026	0.54	1.35	1.03	
1	26	297	0.68	13.4	10.3	26	0.032	0.58	1.34	1.03	
1	24	341	0.74	13.5	10.4	24	0.037	0.62	1.35	1.04	
1	24	389	0.8	13.5	10.4	24	0.042	0.64	1.35	1.04	
1	25	445	0.89	13.2	10.1	25	0.048	0.68	1.32	1.01	
1	24	466	0.93	13.2	10.1	24	0.05	0.69	1.32	1.01	
1	24	493	0.97	13.2	10.1	24	0.053	0.71	1.32	1.01	
1	24	510	1.01	13.5	10.4	24	0.055	0.72	1.35	1.04	
1	24	532	1.06	13.4	10.3	24	0.057	0.73	1.34	1.03	
1	24	560	1.1	13.7	10.6	24	0.06	0.74	1.37	1.06	
1	24	607	1.22	13.8	10.8	24	0.066	0.76	1.38	1.08	
1	24	714	1.4	13.8	10.7	24	0.077	0.79	1.38	1.07	
1	24	746	1.5	14.1	11	24	0.081	0.81	1.41	1.1	
1	24	760	1.65	13.9	10.8	24	0.082	0.82	1.39	1.08	
1	24	798	1.7	13.9	10.8	24	0.086	0.83	1.39	1.08	
1	24	815	1.88	13.8	10.8	24	0.088	0.84	1.38	1.08	
1	24	897	2.15	13.7	10.7	24	0.097	0.86	1.37	1.07	
L-S Fluidisation experiment nr.: 83 Norit RB 4C						A =					
Material =		GAC		Geldarts: D		dp/D =		[m²]			
D =		0.057		[m]		Off-set(ΔP) = -3		[mbar]			
d10_ij =		4.62		[mm]		ΔPmax =		1.39			
Tavg =		32.1		[°C]		Vm (ε=0) =		0.72			
pwet =		1500		[kg/m³]		Lm =		0.28			
mwet =		1.08		[kg]		vmf =		66.6			
L0 =		0.54		[m]		ε0 =		0.47			
Lmf =		0.55		[m]		εmf =		0.48			
Status bed		Temperature		Water flow		Temperature		Velocity		Voidage	
[0/1/2/3]		T		Qw		T (interp.)		vs		ε	
		[°C]		[L/h]		[°C]		[m/s]		[m³/m³]	
0	35	0	0.54	-1.5	-1.5	35	0	0.47	-0.15	-0.15	
0	35	10	0.54	2.2	-0.8	35	0.001	0.47	0.22	-0.08	
0	35	20	0.54	2.4	-0.7	35	0.002	0.47	0.24	-0.07	
0	35	30	0.54	2.4	-0.6	35	0.003	0.47	0.24	-0.06	
0	36	31	0.54	2.5	-0.6	36	0.003	0.47	0.25	-0.06	
0	36	49	0.54	2.8	-0.3	36	0.005	0.47	0.28	-0.03	
0	36	61	0.54	4.7	1.6	36	0.006	0.47	0.47	0.16	
0	36	88	0.54	6.9	3.8	36	0.009	0.47	0.69	0.38	
0	36	121	0.54	8.2	5	36	0.013	0.47	0.82	0.5	
0	36	139	0.54	10.1	6.9	36	0.015	0.47	1.01	0.69	
0	36	160	0.54	12.2	9.1	36	0.017	0.47	1.22	0.91	
1	35	189	0.56	12	8.8	35	0.02	0.49	1.2	0.88	
1	33	202	0.56	12.6	9.5	33	0.021	0.49	1.26	0.95	
1	34	241	0.58	13.1	9.9	34	0.026	0.5	1.31	0.99	
1	34	275	0.61	12.3	9.1	34	0.029	0.53	1.23	0.91	
1	34	326	0.64	12.5	9.3	34	0.035	0.55	1.25	0.93	
1	31	359	0.7	12.6	9.5	31	0.039	0.59	1.26	0.95	
1	31	387	0.79	12.4	9.2	31	0.042	0.64	1.24	0.92	
1	33	442	0.87	12.7	9.6	33	0.048	0.67	1.27	0.96	
1	31	450	0.88	12.8	9.7	31	0.048	0.67	1.28	0.97	
1	33	492	0.95	13.6	10.5	33	0.053	0.7	1.36	1.05	
1	31	515	1	12.9	9.8	31	0.056	0.71	1.29	0.98	
1	32	561	1.1	13.9	10.8	32	0.061	0.74	1.39	1.08	
1	31	602	1.18	13	9.8	31	0.065	0.76	1.3	0.98	
1	33	610	1.2	13.3	10.1	33	0.066	0.76	1.33	1.01	
1	31	656	1.21	13.4	10.3	31	0.071	0.76	1.34	1.03	
1	31	725	1.4	13.6	10.5	31	0.078	0.79	1.36	1.05	
1	30	746	1.5	13.6	10.5	30	0.081	0.81	1.36	1.05	
1	31	778	1.64	13.3	10.2	31	0.084	0.82	1.33	1.02	
1	32	819	1.8	12.9	9.9	32	0.089	0.84	1.29	0.99	
1	32	862	1.95	12.9	9.9	32	0.093	0.85	1.29	0.99	