Supplementary Material

Table S1. Concentrations and impact of AD inhibitors reported in the literature.

Inhibitor	Concentration (mg/L)	Substrate	Conditions	Performance reduction	Ref.
TAN	4000	Cattle manure	CSTR 55 °C	25% reduction in methane yield	([1]
TAN	5 and 7 g-N/L TAN	Cattle manure	UASB	25% reduction in methane yield	[2]
TAN	4 and 7.5 g-N/L TAN	Cattle manure	SMA test	50% reduced growth rate for methanogens	[2]
TAN	1500-3000	-	pH>7.4-7.6	Inhibitory	[3]
TAN	10000 (1200mg/L FAN)	Cattle manure	CSTR 55 °C	Inhibition of the methanogenesis	[4]
FAN	55 at 40 d 32 at 15 and 25 d	Acetate & Propionate	CSTR	Maximum tolerable concentration	[5]
FAN	61	Crab cooker wastewater	UASB 37 °C	40% inhibition of methanogenic activity	[6]
FAN	85	Crab cooker wastewater	ATA test 37 °C	50% inhibition	[6]
FAN	>250	Chicken manure	Batch test	Methane production ceased	[7]
NO_3^-	150 mg-N/L	Dextrin peptone	Batch test 35 °C	52% reduction in methane production rate	[8]
NO_3^-	300 mg-N/L	Dextrin peptone	CSTR 35 °C	90% reduction in methane production rate 95% reduction in methane production rate (after recover of reactor)	[8]
NO_3^-	156 mg-N/L	Acetate	Batch test	Methanogenesis inhibition	[9]
NO_3^-	10 mM	Soil	Soil test	Stopped methanogenesis, recovery 70% methane production	[10]
NO_3^-	5mM	H_2/CO_2 and/or Acetate	*M. bakery* Batch test	65% reduction in methane production	[10]
NO_3^-	30 mM	H_2/CO_2 and/or Acetate	*M. bryantii* Batch test	59% reduction in methane production	[10]
NO_3^-	8 COD/NO_3-N	Glucose	Batch test 35 °C	86% reduction in methane production	[11]
NO_3^-	8 COD/NO_3-N	Glucose	CSTR 35 °C	34.8% reduction of % of methane in biogas	[11]
NO_3^-	14.3 mM	Acetate or methanol	Batch test	46% inhibition on *M. mazey* by competition	[12]
NO_2^-	50 mg-N/L	Dextrin peptone	Batch test 35 °C	20% reduction in methane production rate	[12]
NO_2^-	315 mg-N/L	Glucose	UASB 30 °C	12% reduction	[13]
NO_2^-	50	Glucose	Batch test Non-acclimated dispersed	50% reduction SMA (Specific methanogenic activity)	[13]

NO_2^-	100	Glucose	Batch test Non-acclimated granular	50% reduction SMA	[13]
NO_2^-	100	Glucose	Batch test Acclimated dispersed	50% reduction SMA	[13]
NO_2^-	0.18mM 0.32mM NO_x	Acetate or methanol	Batch test	96-97% inhibition *M. mazey* 95% inhibition *M. mazey*	[12]
NO_2^-	50uM		*M. bakery* Batch test	50% reduction in methane production	[10]
NO_2^-	1mM	H_2/CO_2 and/or Acetate	*M. bryantii* Batch test	50% reduction in methane production	[10]
CN^-	4.5, possible recovery 50, no recovery	Fibber chemical plant wastewater	Batch test	50% IC (toxic to the sludge's methane-producing activity)	[14]
CN^-	5 mg/L	Cassava derived starch and VFA	UASB 33 °C	70% reduction in methane production	[15]
CN^-	125 mg/L	Cassava derived starch and VFA	UASB 33 °C	96% methane reduction with acclimation	[10]
SO_4^{2-}	150	Glucose for semi-batch, VFAs for SMA	Granular sludge, Semi-batch, SMA to the outlet	65% SMA decrease using butyrate at 59 d, recovering at 114 d to 8% SMA decrease	[16]
SO_4^{2-}	Change of COD/SO_4 from 20 to 0.5 (6000 mg/L)	Synthetic organic chemical industry wastewater	UASB 35 °C, Batch tests to the outlet	27% reduction in methane production rate	[17]
SO_4^{2-}	2.2 kg $SO_4/m^3/d$	Mussels process wastewater	Anaerobic filter 37 °C	15% and 2% of Propionate and acetate was converted by sulphate reducing microorganism instead of the methanogens	[18]
SO_4^{2-}	1500 (6.7 COD/SO_4 ratio)	Sewage sludge	CSTR 35 °C	Decrease of 33% of methane production	[19]
Cd	170 Pulse feed:680	Sludge	Fixed film bed reactor Semi-continuous 22 °C	55% biogas reduction Pulse feed: 84.8% decrease	[20]
Cd	15-23 11-34 (with Nickel)	Acetate solution	Pure culture 60 °C	50% inhibition of thermophilic methanogens	[21]
Cd	3300	Sucrose	Batch Hydrogen generation Granular sludge 26 °C	50% reduction of hydrogen potential	[22]
Cd	36	Glucose	Batch 5 d Granular sludge 35 °C	50% reduction of methane production	[23]
Fe	200	Sludge	Batch 55 °C	50% biogas production using Fe NO_3	[24]
Fe (III)	1 mM	Acetate	Batch, Pure culture, *M. hungatei* 30 °C	Almost completely inhibited methane production	[25]

		Carbon dioxide and hydrogen			
Fe (III)	5-10 mM	Acetate Carbon dioxide and hydrogen	Batch, Pure culture, *M. barkeri* 30 °C	(H_2/CO_2) significantly decreased methane production (acetate) methane production was also significantly reduced but less	[25]
Zn	1500	Sucrose	Batch, Hydrogen generation, Granular sludge 26 °C	50% reduction of hydrogen potential	[22]
Zn	4.5	Sucrose	Batch 72 h, Hydrogen generation 35 °C	50% reduction of hydrogen production	[20]
Zn	7.5	Glucose	Batch 5 d, Granular sludge 35 °C	50% reduction in methane production	[23]
Ni	1300	Sucrose	Batch, Hydrogen generation, Granular sludge 26 °C	50% reduction of hydrogen potential	[22]
Ni	50	Ethanol and acetate	EGSB	18% inhibition methanogen	[26]
Ni	14.5-130	Acetate solution	Pure culture 60 °C	50% inhibition of thermophilic methanogens	[21]
Ni	35	Glucose	Batch 5 d, Granular sludge 35 °C	50% reduction of methane production	[23]
Cr	3000	Sucrose	Batch, Hydrogen generation, Granular sludge 26 °C	50% reduction of hydrogen potential	[22]
Cr	60	Sucrose	Batch 72 h Hydrogen generation 35 °C	50% reduction of hydrogen production	[27]
Cr	50	Ethanol and acetate	EGSB	11% inhibition methanogens	[26]
Cr (III)	775 Pulse feed: 3100	Sludge	Fixed film bed reactor Semi-continuous 22 °C	52% biogas reduction Pulse feed: 83% decrease	[28]
Cr	27	Glucose	Batch 5 d, Granular sludge 35 °C	50% reduction in methane production	[23]
Al	1000	Glucose for semi-batch, VFAs for SMA	Granular sludge Semi-batch SMA to the outlet	72% SMA decrease using butyrate at 59 d, recovering at 114 d to 21% SMA decrease and 36% SMA when 150 mg/L of sulphate was added	[16]
Al	2500	Synthetic waste	UASB semi-continuous	Digester failure (85% decrease of biogas volume approximately)	[29]

Cu	6.5	Sucrose	Batch 72 h, Hydrogen generation 35 °C	50% reduction of hydrogen production	[27]
Cu	30	Sucrose	Batch, Hydrogen generation, Granular sludge 26 °C	50% reduction of hydrogen potential	[22]
Cu	2.4-14, 2.2-28 (with Ni)	Acetate solution	Pure culture 60 °C	50% inhibition of thermophilic methanogens	[21]
Cu	50	Ethanol and acetate	EGSB	21% methanogen inhibition with the presence of accumulated Cr 69% methanogen inhibition	[26]
Pb	>5000	Sucrose	Batch, Hydrogen generation, Granular sludge 26 °C	50% reduction of hydrogen potential	[22]
As III	15.5 uM 27.1 uM 4.4 uM	Acetate Hydrogen Lactate	Batch test 1 d, Granular sludge 30 °C	50% inhibition of methanogens	[30]
As III	23.5	Acetate	Batch test for 1 week Granular sludge 30 °C	36.9% inhibition of methanogens	[30]
As III	100uM	Acetate	Batch test 1 d, Flocculent sludge 30 °C	50% inhibition of methanogens	[30]
As V	>500 uM	Acetate or Hydrogen or Lactate	Batch test 1 d, Granular and flocculent sludge 30 °C	Non-inhibition	[30]
As V	500 uM	Acetate	Batch test for 4 d, flocculent sludge 30 °C	Complete inhibition	[30]
SeO_3	10^{-3}M 10^{-2}M	H_2/CO_2 Acetate	Granular sludge Semi-batch	>96% inhibition	[31]
SeO_4	10^{-3}M	Acetate H_2/CO_2	Granular sludge Semi-batch	>96% inhibition	[31]
Hg	125 Pulse feed: 500	Sludge	Fixed film bed reactor Semi-continuous 22 °C	60% biogas reduction Pulse feed: 92% decrease after 2 days	[20]
F^-	325	Glucose	Batch tests, Granular fermenters 30 °C	50% reduction of control activity	[32]
F^-	36.5 25.5	Propionate Butyrate	Batch test, acetogenic bacteria 30 °C	50% reduction of control activity	[32]
F^-	34.5 82	Acetate Hydrogen	Batch test, Flocculent sludge 30 °C	50% reduction of methanogenesis	[32]
F^-	18.1 433	Acetate Hydrogen	Batch test, Flocculent sludge 55 °C	50% reduction of methanogenesis	[32]
F^-	160	Acetate	Batch test, Granular 30 °C	50% reduction of methanogenesis	[32]

Cl^-	>5500	Tannery wastewater	Contact filter reactor	Decreasing trend	[33]
Phenol	300	Phenol, polyphenols, acetate and propionate	ATA and BMP 37 °C	Reduction of expected ratio, 2.03, to 1.62	[28]
Phenol	250	Phenol	2 stage AD 35 °C	62% biogas production reduction	[34]

Continue stir reactor: CSTR; Up-flow anaerobic sludge blanket: UASB; Specific methanogenic activity: SMA; Expanded granular sludge bed: EGSB

Table S2. Statistics of the biogas and methane yield using ANOVA compared with the control test (if $F>F_{crit}$ they are different).

$CuSO_4$	*mg Cu/L*	*20*	*32*	*73*	*123*	*167*
Biogas	F	0.77	0.01	0.26	0.18	0.15
Biogas	F_{crit}	7.71	7.71	7.71	7.71	7.71
Methane	F	0.00	0.61	0.03	0.19	1.64
Methane	F_{crit}	7.71	7.71	7.71	7.71	7.71
$Al_2(SO_4)_3$	*mg Al/L*	*85*	*210*	*771*	*1308*	*1534*
Biogas	F	0.14	0.00	24.59	39.19	309.83
Biogas	F_{crit}	7.71	7.71	7.71	7.71	7.71
Methane	F	0.13	10.82	29.84	155.46	1728.87
Methane	F_{crit}	7.71	7.71	7.71	7.71	7.71
NaCl	*mg Cl/L*	*1066*	*1941*	*2821*	*3666*	*4535*
Biogas	F	22.36	71.65	13.08	5.07	19.78
Biogas	F_{crit}	7.71	7.71	7.71	7.71	7.71
Methane	F	4.29	2.99	1.67	5.07	20.12
Methane	F_{crit}	7.71	7.71	7.71	7.71	7.71
$NaSO_4$	*mg SO_4/L*	*162*	*308*	*600*	*1032*	*1466*
Biogas	F	5.18	59.24	66.89	247.08	47.18
Biogas	F_{crit}	7.71	7.71	7.71	7.71	7.71
Methane	F	65.10	115.08	193.43	715.63	204.86
Methane	F_{crit}	7.71	7.71	7.71	7.71	7.71
$CuCl_2$	*mg Cu/L*	*22*	*91*	*198*	*501*	*804*
Biogas	F	802.48	823.00	567.04	292.74	2496.73
Biogas	F_{crit}	7.71	7.71	7.71	7.71	7.71
Methane	F	446.98	1105.54	239.50	241.92	4729.63
Methane	F_{crit}	7.71	7.71	7.71	7.71	7.71
$AlCl_3$	*mg Al/L*	*82*	*203*	*760*	*1312*	*1531*
Biogas	F	5.69	19.16	284.00	2483.70	3709.46
Biogas	F_{crit}	7.71	7.71	7.71	7.71	7.71
Methane	F	8.59	11.85	549.89	4231.14	4233.74
Methane	F_{crit}	7.71	7.71	7.71	7.71	7.71
$ZnCl_2$	*mg Zn/L*	*10*	*61*	*87*	*592*	*1307*
Biogas	F	0.22	0.23	6.07	1348.11	2973.37
Biogas	F_{crit}	7.71	7.71	7.71	7.71	7.71
Methane	F	0.00	4.87	3.76	1421.18	2923.37
Methane	F_{crit}	7.71	7.71	7.71	7.71	7.71
NH_4SO_4	*mg NH_4/L*	*1460*	*1602*	*1764*	*2201*	*3405*
Biogas	F	3.61	0.03	10.75	47.23	28.78
Biogas	F_{crit}	7.71	7.71	7.71	7.71	7.71
Methane	F	36.82	4.68	49.21	19.93	18.83
Methane	F_{crit}	7.71	7.71	7.71	7.71	7.71
$NaNO_3$	*mg NO_3/L*	*92*	*174*	*254*	*332*	*427*
Biogas	F	100.75	11.85	176.30	43.46	1.36
Biogas	F_{crit}	7.71	7.71	7.71	7.71	7.71
Methane	F	684.23	80.07	270.19	653.99	65.37
Methane	F_{crit}	7.71	7.71	7.71	7.71	7.71
$HgSO_4$	*mg Hg/L*	*25*	*20*	*920*	*239*	*495*
Biogas	F	1.63	7.65	15.86	110.65	8.19
Biogas	F_{crit}	7.71	7.71	7.71	7.71	7.71
Methane	F	13.91	42.45	1.96	11.47	23.17
Methane	F_{crit}	7.71	7.71	7.71	7.71	7.71
NH_4Cl	*mg NH_4/L*	*976*	*1958*	*2946*	*3923*	*5162*
Biogas	F	0.09	0.16	0.87	5.62	28.21
Biogas	F_{crit}	7.71	7.71	7.71	7.71	7.71
Methane	F	0.57	0.00	0.06	1.73	23.79
Methane	F_{crit}	7.71	7.71	7.71	7.71	7.71
$NaHAsO_4$	*mg As/L*	*0.1*	*0.4*	*2*	*4*	*17*

Biogas	F	0.43	5.15	0.09	0.77	0.39	
Biogas	F_{crit}	7.71	7.71	7.71	7.71	7.71	
Methane	F	0.34	1.15	0.04	5.17	0.59	
Methane	F_{crit}	7.71	7.71	7.71	7.71	7.71	
Al+OH/pH		*pH 5*	*pH 4.5*	*pH 6.55*	*Al 608 mg/L*	*Al 262 mg/L*	*Al 464 mg/L*
Biogas	F	37.14	54.77	2.26	13.43	8.29	155.18
Biogas	F_{crit}	18.51	18.51	18.51	18.51	18.51	18.51
Methane	F	600.01	1761.45	0.97	17.10	18.25	104.83
Methane	F_{crit}	18.51	18.51	18.51	18.51	18.51	18.51

Table S3. Results from first-order and Gompertz model for the biogas formation kinetics on the BMP experiments (B=biogas; Conc= concentration on the reactor; C=control).

Salt	Ion	Conc (mg/L)	1st order				Gompertz model				
			k_h (d^{-1})	P_{max} (mL B/ g VS)	$RMSE_n$	r^2	R_m (mL B/g VS/d)	λ (d)	P_{max} (mL B/ g VS)	$RMSE_n$	r^2
$(NH_4)_2SO_4$	NH_4	635 (C)	0.46	598	0.15	0.91	111	0.0	611	0.11	0.98
$(NH_4)_2SO_4$	NH_4	1460	0.59	553	0.11	0.928	132	0.0	566	0.12	0.992
$(NH_4)_2SO_4$	NH_4	1602	0.62	604	0.10	0.939	150	0.0	617	0.13	0.983
$(NH_4)_2SO_4$	NH_4	1764	0.58	565	0.11	0.932	132	0.0	578	0.12	0.990
$(NH_4)_2SO_4$	NH_4	2201	0.43	566	0.12	0.897	113	0.0	556	0.03	0.998
$(NH_4)_2SO_4$	NH_4	3405	0.32	567	0.17	0.824	96	0.1	536	0.02	0.996
NH_4Cl	NH_4	586 (C)	0.34	635	0.24	0.793	98	0.0	570	0.10	0.962
NH_4Cl	NH_4	976	0.36	598	0.21	0.835	90	0.0	535	0.13	0.931
NH_4Cl	NH_4	1958	0.19	642	0.30	0.841	57	0.0	556	0.06	0.989
NH_4Cl	NH_4	2946	0.03	889	0.50	0.672	32	2.4	543	0.16	0.977
NH_4Cl	NH_4	3923	0.02	889	0.47	0.682	22	3.3	505	0.17	0.993
NH_4Cl	NH_4	5162	0.00	79	0.92	0.654	24	9.2	426	0.65	0.991
$ZnSO_4$	Zn	0.26(C)	0.01	2202	0.55	0.278	4	4.5	261	0.17	0.935
$ZnSO_4$	Zn	2	0.04	1662	0.41	0.767	69	1.4	830	0.07	0.992
$ZnSO_4$	Zn	7	0.03	1988	0.45	0.753	80	1.4	821	0.11	0.983
$ZnSO_4$	Zn	112	0.00	30016	0.53	0.310	28	2.0	655	0.04	0.998
$ZnSO_4$	Zn	746	0.00	20620	0.63	0.308	12	7.9	522	0.07	0.994
$ZnSO_4$	Zn	760	0.00	1725	0.75	0.530	18	21.4	477	0.03	0.998
$ZnSO_4$	Zn	1676	-	-	-	-	-	-	-	-	-
$ZnCl_2$	Zn	3 (C)	0.46	598	0.15	0.911	112	0.0	611	0.11	0.984
$ZnCl_2$	Zn	10	0.49	615	0.15	0.909	117	0.0	638	0.12	0.992
$ZnCl_2$	Zn	61	0.41	628	0.14	0.910	111	0.0	627	0.07	0.990
$ZnCl_2$	Zn	87	0.35	659	0.16	0.895	102	0.0	640	0.05	0.984
$ZnCl_2$	Zn	592	-	-	-	-	-	-	-	-	-
$ZnCl_2$	Zn	1307	-	-	-	-	-	-	-	-	-
$CuSO_4$	Cu	7 (C)	0.22	621	0.14	0.801	86	0.0	546	0.04	0.977
$CuSO_4$	Cu	20	0.27	655	0.10	0.878	117	0.0	566	0.06	0.955
$CuSO_4$	Cu	32	0.29	611	0.10	0.871	119	0.0	538	0.04	0.969

$CuSO_4$	Cu	73	0.26	555	0.07	0.921	112	0.0	556	0.06	0.958
$CuSO_4$	Cu	123	0.23	624	0.13	0.853	98	0.0	524	0.06	0.957
$CuSO_4$	Cu	167	0.22	639	0.15	0.825	94	0.0	535	0.04	0.982
$CuCl_2$	Cu	0.1 (C)	0.41	890	0.12	0.890	131	0.0	908	0.05	0.994
$CuCl_2$	Cu	22	0.37	351	0.12	0.897	51	0.0	345	0.02	0.996
$CuCl_2$	Cu	91	0.14	481	0.24	0.662	45	0.8	373	0.02	0.996
$CuCl_2$	Cu	198	0.00	5679	0.65	0.230	23	2.9	256	0.11	0.955
$CuCl_2$	Cu	501	-	-	-	-	-	-	-	-	-
$CuCl_2$	Cu	804	-	-	-	-	-	-	-	-	-
$Al_2(SO_4)_3$	Al	4 (C)	0.22	621	0.14	0.801	86	0.0	546	0.04	0.977
$Al_2(SO_4)_3$	Al	85	0.27	611	0.10	0.884	106	0.0	544	0.05	0.955
$Al_2(SO_4)_3$	Al	210	0.24	614	0.11	0.884	94	0.0	532	0.07	0.929
$Al_2(SO_4)_3$	Al	771	0.10	572	0.28	0.668	60	0.7	395	0.04	0.989
$Al_2(SO_4)_3$	Al	1309	4.00	21	0.09	0.000	15	50.0	19	0.82	0.001
$Al_2(SO_4)_3$	Al	1534	-	-	-	-	-	-	-	-	-
$AlCl_3$	Al	1 (C)	0.41	890	0.12	0.89	131	0.0	908	0.05	0.99
$AlCl_3$	Al	82	0.49	941	0.08	0.954	148	0.0	974	0.44	0.996
$AlCl_3$	Al	204	0.43	961	0.09	0.950	153	0.0	1008	0.07	0.996
$AlCl_3$	Al	760	-	-	-	-	-	-	-	-	-
$AlCl_3$	Al	1312	-	-	-	-	-	-	-	-	-
$AlCl_3$	Al	1531	-	-	-	-	-	-	-	-	-
$Al_2(SO_4)_3$+OH	Al	0 (C)	1.00	546	0.46	0.014	154	0.2	524	0.03	0.957
$Al_2(SO_4)_3$+OH	Al	309	28.00	130	0.76	0.011	118	0.8	436	0.02	0.987
$Al_2(SO_4)_3$+OH	Al	511	0.03	2602	0.77	0.025	95	0.9	398	0.02	0.997
$Al_2(SO_4)_3$+OH	Al	607	23.21	41	0.89	0.012	80	1.2	373	0.02	0.994
HCl	pH	7.3 (C)	1.00	546	0.46	0.014	154	0.2	524	0.03	0.957
HCl	pH	6.6	1.00	536	0.45	0.019	131	0.1	516	0.03	0.974
HCl	pH	5.2	0.02	144	0.88	0.200	48	15.7	111	0.63	0.957
HCl	pH	4.5	0.03	31	0.92	0.135	25	25.1	118	0.34	0.992
NaCl	Na	3360 (C)	0.21	636	0.10	0.881	103	0.0	560	0.04	0.982
NaCl	Na	3915	0.26	700	0.09	0.895	134	0.0	643	0.04	0.978
NaCl	Na	4483	0.23	704	0.06	0.939	119	0.0	574	0.04	0.974
NaCl	Na	5054	0.22	705	0.08	0.921	112	0.0	579	0.04	0.977

NaCl	Na	5601	0.19	626	0.09	0.911	88	0.0	494	0.05	0.971
NaCl	Na	6165	0.09	913	0.18	0.774	56	0.0	512	0.02	0.995
Na_2SO_4	Na	3360 (C)	0.21	636	0.10	0.881	103	0.0	560	0.04	0.982
Na_2SO_4	Na	3430	0.25	637	0.05	0.952	115	0.0	538	0.05	0.958
Na_2SO_4	Na	3499	0.27	595	0.05	0.962	116	0.0	512	0.05	0.951
Na_2SO_4	Na	3639	0.27	575	0.05	0.956	114	0.0	499	0.05	0.959
Na_2SO_4	Na	3846	0.31	523	0.03	0.978	118	0.0	466	0.05	0.947
Na_2SO_4	Na	4054	0.27	593	0.05	0.954	115	0.0	511	0.05	0.952
$NaNO_3$	Na	1370 (C)	0.19	784	0.41	0.775	64	0.0	748	0.04	0.995
$NaNO_3$	Na	1403	0.05	1073	0.39	0.722	32	1.6	694	0.09	0.997
$NaNO_3$	Na	1433	0.00	12884	0.47	0.658	23	3.3	657	0.10	0.988
$NaNO_3$	Na	1463	0.00	9507	0.39	0.677	25	4.0	652	0.15	0.996
$NaNO_3$	Na	1491	0.02	1689	0.39	0.704	26	2.9	713	0.13	0.993
$NaNO_3$	Na	1527	0.01	4685	0.42	0.702	30	3.0	780	0.10	0.997
$HgSO_4$	Hg	0.03 (C)	0.19	784	0.41	0.775	64	0.0	748	0.04	0.995
$HgSO_4$	Hg	25	0.19	826	0.29	0.796	75	0.2	760	0.03	0.994
$HgSO_4$	Hg	20	0.32	855	0.35	0.761	107	0.0	840	0.07	0.987
$HgSO_4$	Hg	920	0.36	824	0.34	0.750	113	0.0	824	0.10	0.982
$HgSO_4$	Hg	239	0.23	889	0.38	0.781	90	0.2	820	0.03	0.992
$HgSO_4$	Hg	495	0.12	948	0.49	0.706	82	0.8	800	0.08	0.991
Na_2HAsO_4	As	0.03 (C)	0.34	635	0.24	0.793	98	0.0	570	0.10	0.962
Na_2HAsO_4	As	0.1	0.32	612	0.25	0.787	87	0.0	554	0.10	0.975
Na_2HAsO_4	As	0.4	0.23	562	0.24	0.869	53	0.0	507	0.12	0.984
Na_2HAsO_4	As	2	0.24	594	0.22	0.901	56	0.0	511	0.16	0.920
Na_2HAsO_4	As	4	0.15	679	0.26	0.924	41	0.0	552	0.14	0.932
Na_2HAsO_4	As	17	0.03	883	0.48	0.761	25	2.2	536	0.18	0.982

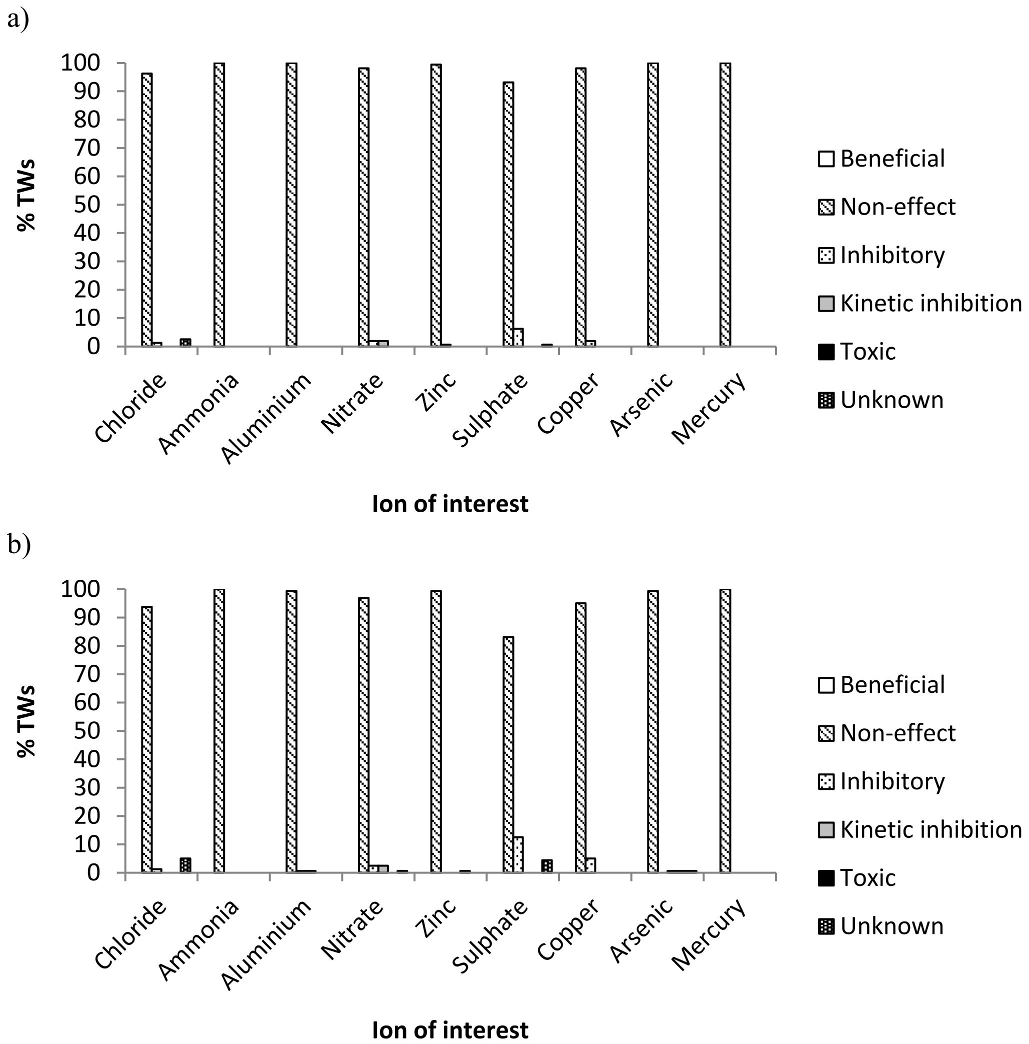

Figure S1. Percentage of TWs within the 160 studied that will incur in beneficial, non-effect, yield inhibition, kinetic inhibition, toxic or unknown impact if dosed to sewage sludge anaerobic digesters as 10% of the feedstock (a) or 30% of the feedstock (%) (b).

Description of Figure S1:

A more detailed investigation was conducted for scenarios with TW as 10% and 30% of the feedstock (10/90 and 30/70), for which potential impact as beneficial, non-effect, yield inhibition for methane yields, kinetic inhibition and toxic were investigated for the individual constituents present in the TWs. Another division called unknown was added to refer to conditions above the maximum concentration studied where no toxicity was observed. The 30/70 scenario was selected because it is reported to be the average spare capacity in municipal wastewater treatment plants digesters in Europe [35]. The 10/90 scenario was selected as 10% is commonly accepted by wastewater utilities to be the maximum spare capacity that could be allocated to TWs digestion without hindering sewage sludge treatment.

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