

Source for Publication	API	EC <sub>10</sub> (µg/L)	Species	Test Guideline / Reference	PNEC <sub>ENV</sub> (µg/L)	PNEC <sub>MIC</sub> (µg/L)	Lowest Value (µg/L)	PNEC <sub>ENV</sub> Rationale	Revisions Since Last Version
Bengtsson-Palme & Larsson, 2016	Amikacin				N/A	16.00	16.00	No industry data	No change
Industry Data	Amoxicillin	5.7	<i>Anabaena flos-aquae</i>	OECD 201	0.57	0.25	0.25	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10 <sup>a</sup>	Industry testing completed
Gonzalez-Pleiter, et al., 2013		6160	<i>Anabaena sp. CPB4337</i>	OECD 201					
Industry Data		530000	<i>Raphidocelis subcapitata</i>	OECD 201					
Gonzalez-Pleiter, et al., 2013		1500000	<i>Raphidocelis subcapitata</i>	OECD 201					
Bengtsson-Palme & Larsson, 2016	Amphotericin B				N/A	0.02	0.02	No industry data	No change
Industry Data	Ampicillin	44.6	<i>Anabaena cylindrica</i>	OECD 201	0.60	0.25	0.25	<i>Cyanobium gracile</i> EC <sub>10</sub> ÷ 10	Industry testing completed & new literature data added (PNEC <sub>ENV</sub> originally 0.87 µg/L)
Le Page et al., 2019		8.3 <sup>h</sup>	<i>Anabaena flos-aquae</i>	OECD 201					
Industry Data		13	<i>Anabaena flos-aquae</i>	OECD 201					
Le Page et al., 2019		18.7	<i>Anabaena flos-aquae</i>	OECD 201					
Le Page et al., 2019		5.9	<i>Cyanobium gracile</i>	OECD 201					
Industry Data		91500	<i>Daphnia magna</i>	OECD 211					
Industry Data		94300	<i>Desmodesmus subspicatus</i>	OECD 201					
Le Page et al., 2019		34.3	<i>Geminocystis herdmanii</i>	OECD 201					
Industry Data		100000	<i>Raphidocelis subcapitata</i>	OECD 201					
Le Page et al., 2019		36.5 <sup>h</sup>	<i>Synechocystis sp.</i>	OECD 201					
Le Page et al., 2019		38.8 <sup>g</sup>	<i>Synechococcus elongates</i>	OECD 201					
Le Page et al., 2019		16.2 <sup>g</sup>	<i>Synechococcus leopoliensis</i>	OECD 201					
Industry Data		19	<i>Synechococcus leopoliensis</i>	OECD 201					
Le Page et al., 2019		38 <sup>g</sup>	<i>Synechococcus sp.</i>	OECD 201					
Bengtsson-Palme & Larsson, 2016	Anidulafungin				N/A	0.02	0.02	No industry data	No change
Industry Data	Avilamycin	1250 <sup>b</sup>	<i>Synechococcus leopoliensis</i>	OECD 201	125.00	8.00	8.00	<i>Synechococcus leopoliensis</i> NOEC ÷ 10	Industry data added
Le Page et al., 2019	Azithromycin	5	<i>Anabaena cylindrica</i>	OECD 201	0.03	0.25	0.03	<i>Microcystis aeruginosa</i> EC <sub>10</sub> ÷ 10	Original PNEC <sub>ENV</sub> (0.02 µg/L) based off NOEC, EC <sub>10</sub> used preferentially
Le Page et al., 2019		10.5 <sup>h</sup>	<i>Anabaena flos-aquae</i>	OECD 201					
Industry Data		4.4	<i>Ceriodaphnia dubia</i>	OECD 201					
Le Page et al., 2019		4.8	<i>Cyanobium gracile</i>	OECD 201					
Le Page et al., 2019		3.2	<i>Geminocystis herdmanii</i>	OECD 201					
Industry Data		0.33	<i>Microcystis aeruginosa</i>	EPA 1002.0					
Industry Data		4600	<i>Pimephales promelas</i>	OECD 210					
Industry Data		1.8	<i>Raphidocelis subcapitata</i>	OECD 201					

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Le Page et al., 2019		8.6 <sup>h</sup>	<i>Synechocystis sp.</i>	OECD 201					
Le Page et al., 2019		4.4 <sup>B</sup>	<i>Synechococcus elongates</i>	OECD 201					
Le Page et al., 2019		8.7 <sup>B</sup>	<i>Synechococcus leopoliensis</i>	OECD 201					
Le Page et al., 2019		17.7 <sup>B</sup>	<i>Synechococcus sp.</i>	OECD 201					
Bengtsson-Palme & Larsson, 2016	Aztreonam				N/A	0.50	0.50	No industry data	No change
Industry Data	Bacitracin	1010	<i>Anabaena flos-aquae</i>	OECD 201	114.59	8.00	8.00	Geomean of <i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	No change
Industry Data		1300	<i>Anabaena flos-aquae</i>	OECD 201					
Industry Data	Bedaquiline	0.8 <sup>b</sup>	<i>Anabaena flos-aquae</i>	OECD 201	0.08	N/A	0.08	<i>Anabaena flos-aquae</i> NOEC ÷ 10	No change
Industry Data		4.1	<i>Brachydanio rerio</i>	OECD 210					
Industry Data		4.7	<i>Daphnia magna</i>	OECD 211					
Industry Data		0.8 <sup>b</sup>	<i>Raphidocelis subcapitata</i>	OECD 201					
Bengtsson-Palme & Larsson, 2016	Capreomycin				N/A	2.00	2.00	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Cefaclor				N/A	0.50	0.50	No industry data	No change
Industry Data	Cefadroxil	1.4	<i>Anabaena flos-aquae</i>	OECD 201	0.14	2.00	0.14	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	Industry testing completed
Industry Data	Cefalonium	211	<i>Anabaena flos-aquae</i>	OECD 201	21.10	N/A	21.10	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	No change
Industry Data		91000	<i>Raphidocelis subcapitata</i>	OECD 201					
Bengtsson-Palme & Larsson, 2016	Cefaloridine				N/A	4.00	4.00	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Cefalothin				N/A	2.00	2.00	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Cefazolin				N/A	1.00	1.00	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Cefdinir				N/A	0.25	0.25	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Cefepime				N/A	0.50	0.50	No industry data	No change
Industry Data	Cefixime	6.04	<i>Anabaena flos-aquae</i>	OECD 201	0.60	0.06	0.06	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	Original PNEC <sub>ENV</sub> (0.18 µg/L) based off NOEC, EC <sub>10</sub> used preferentially
Bengtsson-Palme & Larsson, 2016	Cefoperazone				N/A	0.50	0.50	No industry data	No change
Le Page et al., 2019	Cefotaxime	1.2	<i>Anabaena cylindrica</i>	OECD 201	0.12	0.13	0.12	<i>Anabaena cylindrica</i> EC <sub>10</sub> ÷ 10	No change
Industry Data		4.47	<i>Anabaena flos-aquae</i>	OECD 201					
Le Page et al., 2019		1.4 <sup>h</sup>	<i>Anabaena flos-aquae</i>	OECD 201					

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Le Page et al., 2019		8.3	<i>Cyanobium gracile</i>	OECD 201					
Le Page et al., 2019		15.1	<i>Geminocystis herdmanii</i>	OECD 201					
Le Page et al., 2019		39.8 <sup>h</sup>	<i>Synechocystis sp.</i>	OECD 201					
Le Page et al., 2019		20.8 <sup>g</sup>	<i>Synechococcus elongates</i>	OECD 201					
Le Page et al., 2019		8.7 <sup>g</sup>	<i>Synechococcus leopoliensis</i>	OECD 201					
Le Page et al., 2019		16.2 <sup>g</sup>	<i>Synechococcus sp.</i>	OECD 201					
Bengtsson-Palme & Larsson, 2016	Cefoxitin				N/A	8.00	8.00	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Cefpirome				N/A	0.06	0.06	No industry data	No change
Industry Data	Cefpodoxime	14.7	<i>Anabaena flos-aquae</i>	OECD 201	1.76	0.25	0.25	<i>Anabaena flos-aquae</i>	Industry testing
Industry Data	proxetil	21	<i>Anabaena flos-aquae</i>	OECD 201				<i>EC</i> <sub>10</sub> ÷ 10 <sup>a</sup>	completed
Industry Data	Cefquinome	16	<i>Anabaena flos-aquae</i>	OECD 201	1.60	N/A	1.60	<i>Anabaena flos-aquae</i>	No change
Industry Data		52000	<i>Raphidocelis subcapitata</i>	OECD 201				<i>EC</i> <sub>10</sub> ÷ 10	
Industry Data	Ceftaroline	1.2 <sup>c</sup>	<i>Anabaena flos-aquae</i>	OECD 201	0.12	0.06	0.06	<i>Anabaena flos-aquae</i>	No change
Industry Data		33000 <sup>c</sup>	<i>Raphidocelis subcapitata</i>	OECD 201				NOEC ÷ 10	
Industry Data		5000 <sup>c</sup>	<i>Pimephales promelas</i>	OECD 210					
Industry Data		7900 <sup>c</sup>	<i>Daphnia magna</i>	OECD 211					
Industry Data	Ceftazidime	13	<i>Anabaena flos-aquae</i>	OECD 201	1.30	0.50	0.50	<i>Anabaena flos-aquae</i>	No change
Industry Data		9200	<i>Daphnia magna</i>	OECD 211				<i>EC</i> <sub>10</sub> ÷ 10	
Industry Data		8000	<i>Pimephales promelas</i>	OECD 210					
Industry Data		120000	<i>Raphidocelis subcapitata</i>	OECD 201					
Bengtsson-Palme & Larsson, 2016	Ceftibuten				N/A	0.25	0.25	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Ceftiofur				N/A	0.06	0.06	No industry data	No change
Industry Data	Ceftobiprole	2.52 <sup>d</sup>	<i>Anabaena flos-aquae</i>	OECD 201	0.23	0.25	0.23	<i>Anabaena flos-aquae</i>	No change
Industry Data		5600	<i>Brachydanio rerio</i>	OECD 210				<i>EC</i> <sub>10</sub> ÷ 10	
Industry Data		37000	<i>Daphnia magna</i>	OECD 211					
Industry Data	Ceftolozane	19	<i>Anabaena flos-aquae</i>	OECD 201	1.90	N/A	1.90	<i>Anabaena flos-aquae</i>	No change
Industry Data		9600 <sup>b</sup>	<i>Daphnia magna</i>	OECD 211				<i>EC</i> <sub>10</sub> ÷ 10	
Industry Data		10000 <sup>b</sup>	<i>Pimephales promelas</i>	OECD 210					
Industry Data	Ceftriaxone	92000 <sup>b</sup>	<i>Daphnia magna</i>	OECD 211	29.40	0.03	0.03	<i>Synechococcus</i>	Original PNEC <sub>ENV</sub> (10
Industry Data		98800 <sup>b</sup>	<i>Raphidocelis subcapitata</i>	OECD 201				<i>leopoliensis EC</i> <sub>10</sub> ÷ 10	µg/L) based off

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Industry Data		294	<i>Synechococcus leopoliensis</i>	OECD 201					NOEC, EC <sub>10</sub> used preferentially
Industry Data	Cefuroxime	17	<i>Anabaena flos-aquae</i>	OECD 201	1.70	0.50	0.50	<i>Anabaena flos-aquae</i>	Original PNEC <sub>ENV</sub> (0.84 µg/L) based off NOEC, EC <sub>10</sub> used preferentially
Industry Data		91000	<i>Raphidocelis subcapitata</i>	OECD 201				EC <sub>10</sub> ÷ 10	
Industry Data	Cephalexin	2.1	<i>Anabaena flos-aquae</i>	OECD 201	0.21	4.00	0.21	<i>Anabaena flos-aquae</i>	Original PNEC <sub>ENV</sub> (0.08 µg/L) based off NOEC, EC <sub>10</sub> used preferentially
Industry Data		120000	<i>Raphidocelis subcapitata</i>	OECD 201				EC <sub>10</sub> ÷ 10	
Industry Data	Cephadrine	1.9	<i>Anabaena flos-aquae</i>	OECD 201	0.19	N/A	0.19	<i>Anabaena flos-aquae</i>	Industry testing completed
								EC <sub>10</sub> ÷ 10	
Bengtsson-Palme & Larsson, 2016	Chloramphenicol				N/A	8.00	8.00	No industry data	No change
Industry Data	Chlortetracycline	50 <sup>e</sup>	<i>Raphidocelis subcapitata</i>	OECD 201	5.00	N/A	5.00	<i>Raphidocelis subcapitata</i>	New industry data added
								EC <sub>10</sub> ÷ 10	
Ebert et al., 2011	Ciprofloxacin	4.47	<i>Anabaena flos-aquae</i>	OECD 201	0.45	0.06	0.06	<i>Anabaena flos-aquae</i>	No change
Industry Data		8042 <sup>b</sup>	<i>Desmodesmus subspicatus</i>	OECD 201				EC <sub>10</sub> ÷ 10	
Baumann et al., 2015	Clarithromycin	2.6	<i>Anabaena flos-aquae</i>	OECD 201	0.26	0.25	0.25	<i>Anabaena flos-aquae</i>	Original PNEC <sub>ENV</sub> (0.08 µg/L) based on NOEC for yield, EC <sub>10</sub> for growth rate used preferentially
Baumann et al., 2015		2100 <sup>b</sup>	<i>Daphnia magna</i>	OECD 211				EC <sub>10</sub> ÷ 10	
Baumann et al., 2015		27.8	<i>Desmodesmus subspicatus</i>	ISO 8692					
Bengtsson-Palme & Larsson, 2016	Clinafloxacin				N/A	0.50	0.50	No industry data	No change
Industry Data	Clindamycin	8.1	<i>Anabaena flos-aquae</i>	OECD 201	0.10	1.00	0.10	<i>Raphidocelis subcapitata</i>	No change
Industry Data		0.98	<i>Raphidocelis subcapitata</i>	OECD 201				EC <sub>10</sub> ÷ 10	
Industry Data	Cloxacillin	200	<i>Anabaena flos-aquae</i>	OECD 201	20.00	0.13	0.13	<i>Anabaena flos-aquae</i>	Industry testing completed
								EC <sub>10</sub> ÷ 10	
Industry Data	Colistin (Polymyxin E)	90	<i>Anabaena flos-aquae</i>	OECD 201	9.00	2.00	2.00	<i>Anabaena flos-aquae</i>	Industry testing completed
								EC <sub>10</sub> ÷ 10	
Industry Data	Daptomycin	17000	<i>Anabaena flos-aquae</i>	OECD 201	510.00	1.00	1.00	<i>Pimephales promelas</i>	Industry testing completed
Industry Data		34000	<i>Raphidocelis subcapitata</i>	OECD 201				NOEC ÷ 10	
Industry Data		5100 <sup>b</sup>	<i>Pimephales promelas</i>	OECD 210					
Industry Data		6800	<i>Daphnia magna</i>	OECD 211					

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Industry Data	Delamanid	≥0.42 <sup>c</sup>	<i>Anabaena flos-aquae</i>	OECD 201	0.03	N/A	0.03	<i>Raphidocelis subcapitata</i> NOEC ÷ 10	Additional literature data added
Industry Data		≥0.59 <sup>c</sup>	<i>Daphnia magna</i>	OECD 211					
Industry Data		≥0.71 <sup>c</sup>	<i>Pimephales promelas</i>	OECD 210					
Industry Data		≥0.3 <sup>c</sup>	<i>Raphidocelis subcapitata</i>	OECD 201					
Industry Data	Doripenem	4.6	<i>Anabaena flos-aquae</i>	OECD 201	0.46	0.13	0.13	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	Original PNEC <sub>ENV</sub> (0.11 µg/L) based off NOEC, EC <sub>10</sub> used preferentially
Industry Data		9200	<i>Brachydanio rerio</i>	OECD 210					
Industry Data		9400	<i>Daphnia magna</i>	OECD 211					
Industry Data		61000 <sup>b</sup>	<i>Scenedesmus subspicatus</i>	OECD 201					
Industry Data	Doxycycline	251	<i>Anabaena flos-aquae</i>	OECD 201	25.10	2.00	2.00	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	Industry testing completed
Industry Data	Enramycin	48	<i>Anabaena flos-aquae</i>	OECD 201	4.80	N/A	4.80	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	No change
Industry Data		4200	<i>Raphidocelis subcapitata</i>	OECD 201					
Ebert et al., 2011	Enrofloxacin	19.1 <sup>b</sup>	<i>Anabaena flos-aquae</i>	OECD 201	1.91	0.06	0.06	<i>Anabaena flos-aquae</i> NOEC ÷ 10	No change
Industry Data		19.1 <sup>c</sup>	<i>Synechococcus leopoliensis</i>	OECD 201					
Ebert et al., 2011		1140 <sup>b</sup>	<i>Desmodesmus subspicatus</i>	OECD 201					
Industry Data		1600	<i>Daphnia magna</i>	OECD 211					
Industry Data	Ertapenem	140	<i>Anabaena flos-aquae</i>	OECD 201	14.00	0.13	0.13	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	No change
Industry Data		82000	<i>Daphnia magna</i>	OECD 211					
Industry Data		2500	<i>Pimephales promelas</i>	OECD 210					
Industry Data		51000	<i>Raphidocelis subcapitata</i>	OECD 201					
Le Page et al., 2019	Erythromycin	22.3	<i>Anabaena cylindrica</i>	OECD 201	0.50	1.00	0.50	<i>Anabaena sp.</i> CPB4337 EC <sub>10</sub> ÷ 10	No change
Gonzalez-Pleiter, et al., 2013		5	<i>Anabaena sp.</i> CPB4337	OECD 201					
Le Page et al., 2019		58.8 <sup>h</sup>	<i>Anabaena flos-aquae</i>	OECD 201					
Le Page et al., 2019		44.5	<i>Cyanobium gracile</i>	OECD 201					
Le Page et al., 2019		50.7	<i>Geminocystis herdmanii</i>	OECD 201					
Gonzalez-Pleiter, et al., 2013		36	<i>Raphidocelis subcapitata</i>	OECD 201					
Le Page et al., 2019		21.2 <sup>h</sup>	<i>Synechocystis sp.</i>	OECD 201					
Le Page et al., 2019		30.1 <sup>g</sup>	<i>Synechococcus elongates</i>	OECD 201					
Le Page et al., 2019		35 <sup>g</sup>	<i>Synechococcus leopoliensis</i>	OECD 201					
Le Page et al., 2019		29.1 <sup>g</sup>	<i>Synechococcus sp.</i>	OECD 201					

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Bengtsson-Palme & Larsson, 2016	Ethambutol				N/A	2.00	2.00	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Faropenem				N/A	0.02	0.02	No industry data	No change
Industry Data	Fidaxomicin	>18400	<i>Anabaena flos-aquae</i>	OECD 201	891.00	0.02	0.02	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	Original PNEC <sub>ENV</sub> (580 µg/L) based off NOEC, EC <sub>10</sub> used preferentially
Industry Data		19600 <sup>b</sup>	<i>Daphnia magna</i>	OECD 211					
Industry Data		8910 <sup>b</sup>	<i>Pimephales promelas</i>	OECD 210					
Industry Data	Florfenicol	51 <sup>b</sup>	<i>Anabaena flos-aquae</i>	OECD 201	38.00	2.00	2.00	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10 <sup>f</sup>	Industry data added
Industry Data		110 <sup>b</sup>	<i>Anabaena flos-aquae</i>	OECD 201					
Industry Data		380	<i>Anabaena flos-aquae</i>	OECD 201					
Industry Data		750 <sup>b</sup>	<i>Raphidocelis subcapitata</i>	OECD 201					
Industry Data		1500	<i>Daphnia magna</i>	OECD 211					
Industry Data		800 <sup>b</sup>	<i>Daphnia magna</i>	OECD 211					
Industry Data		5500	<i>Pimephales promelas</i>	OECD 210					
Industry Data		5500	<i>Pimephales promelas</i>	OECD 210					
Industry Data		268	<i>Anabaena flos-aquae</i>	OECD 201	26.80	N/A	26.80		
Bengtsson-Palme & Larsson, 2016	Fluconazole				N/A	0.25	0.25	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Flumequine				N/A	0.25	0.25	No industry data	No change
Industry Data	Fosfomicin	N/A	<i>Anabaena flos-aquae</i>	OECD 201	N/A	2.00	2.00	Industry testing on-going	No change
Bengtsson-Palme & Larsson, 2016	Fusidic acid				N/A	0.50	0.50	No industry data	No change
Industry Data	Framycetine	N/A	<i>Anabaena flos-aquae</i>	OECD 201	Testing on-going	0.06	0.06	Industry testing on-going	Added; New industry testing initiated/on-going
Bengtsson-Palme & Larsson, 2016	Gatifloxacin				N/A	0.13	0.13	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Gemifloxacin				N/A	0.06	0.06	No industry data	No change
Industry Data	Gentamicin	2	<i>Anabaena flos-aquae</i>	OECD 201	0.15	1.00	0.15	<i>Raphidocelis subcapitata</i> EC <sub>10</sub> ÷ 10	No change
Industry Data		6.2	<i>Daphnia magna</i>	OECD 211					
Industry Data		9.62	<i>Daphnia magna</i>	OECD 211					
Industry Data		1.5	<i>Raphidocelis subcapitata</i>	OECD 201					
Industry Data		65.9	<i>Synechococcus leopoliensis</i>	OECD 201					

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Industry Data	Imipenem	4.1	<i>Anabaena flos-aquae</i>	OECD 201	0.41	0.13	0.13	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	No change
Industry Data		74000	<i>Raphidocelis subcapitata</i>	OECD 201					
Bengtsson-Palme & Larsson, 2016	Isoniazid				N/A	0.13	0.13	No industry data	No change
Industry Data	Kanamycin	11	<i>Anabaena flos-aquae</i>	OECD 201	1.05	2.00	1.05	<i>Synechococcus leopoliensis</i> EC <sub>10</sub> ÷ 10	No change
Industry Data		6830	<i>Daphnia magna</i>	OECD 211					
Industry Data		4970	<i>Desmodesmus subspicatus</i>	OECD 201					
Industry Data		310	<i>Raphidocelis subcapitata</i>	OECD 201					
Industry Data		10.5	<i>Synechococcus leopoliensis</i>	OECD 201					
Industry Data		10.5	<i>Synechococcus leopoliensis</i>	OECD 201					
Industry Data		Levofloxacin	5.22	<i>Anabaena flos-aquae</i>					
Gonzalez-Pleiter, et al., 2013	1100		<i>Anabaena sp. CPB4337</i>	OECD 201					
Gonzalez-Pleiter, et al., 2013	930		<i>Raphidocelis subcapitata</i>	OECD 201					
Guo et al., 2016	Lincomycin	12.20 <sup>i</sup>	<i>Anabaena flos-aquae</i>	OECD 201	0.81	2.00	0.81	<i>Synechococcus leopoliensis</i> EC <sub>10</sub> ÷ 10	Original PNEC <sub>ENV</sub> (0.08 µg/L) based on NOEC for <i>Anabaena flos-aquae</i> , EC <sub>10</sub> used preferentially ( <i>Synechococcus leopoliensis</i> more sensitive)
Industry Data		14.3	<i>Anabaena flos-aquae</i>	OECD 201					
Guo et al., 2016		91770 <sup>b,i</sup>	<i>Chlorella vulgaris</i>	OECD 201					
Guo et al., 2016		77.24 <sup>i</sup>	<i>Desmodesmus subspicatus</i>	OECD 201					
Guo et al., 2016		357.75 <sup>i</sup>	<i>Raphidocelis subcapitata</i>	OECD 201					
Guo et al., 2016		8.13 <sup>i</sup>	<i>Synechococcus leopoliensis</i>	OECD 201					
Industry Data		Linezolid	35 <sup>i</sup>	<i>Anabaena flos-aquae</i>					
Industry Data	9900		<i>Pimephales promelas</i>	OECD 210					
Industry Data	24000		<i>Daphnia magna</i>	OECD 211					
Bengtsson-Palme & Larsson, 2016	Loracarbef				N/A	2.00	2.00	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Mecillinam				N/A	1.00	1.00	No industry data	No change
Industry Data	Meropenem	15 <sup>c</sup>	<i>Anabaena flos-aquae</i>	OECD 201	1.50	0.06	0.06	<i>Anabaena flos-aquae</i> NOEC ÷ 10	Original PNEC <sub>ENV</sub> value reported was an error (0.36 µg/L)
Bengtsson-Palme & Larsson, 2016	Metronidazole				N/A	0.13	0.13	No industry data	No change
Industry Data	Minocycline	N/A	<i>Anabaena flos-aquae</i>	OECD 201	Testing on-going	1.00	1.00	Industry testing on-going	No change

Source for Publication	API	EC <sub>10</sub> (µg/L)	Species	Test Guideline / Reference	PNEC <sub>ENV</sub> (µg/L)	PNEC <sub>MIC</sub> (µg/L)	Lowest Value (µg/L)	PNEC <sub>ENV</sub> Rationale	Revisions Since Last Version
Bengtsson-Palme & Larsson, 2016	Moxifloxacin				N/A	0.13	0.13	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Mupirocin				N/A	0.25	0.25	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Nalidixic acid				N/A	16.00	16.00	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Narasin				N/A	0.50	0.50	No industry data	No change
Industry Data	Natamycin	N/A	<i>Anabaena flos-aquae</i>	OECD 201	Testing on-going	N/A	N/A	Industry testing on-going	Industry testing initiated/on-going
Industry Data	Neomycin	0.3	<i>Anabaena flos-aquae</i>	OECD 201	0.03	2.00	0.03	<i>Anabaena flos-aquae</i>	No change
Industry Data		2.2	<i>Raphidocelis subcapitata</i>	OECD 201				EC <sub>10</sub> ÷ 10	
Bengtsson-Palme & Larsson, 2016	Netilmicin				N/A	0.50	0.50	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Nitrofurantoin				N/A	64.00	64.00	No industry data	No change
Gonzalez-Pleiter, et al., 2013	Norfloxacin	1200	<i>Anabaena sp. CPB4337</i>	OECD 201	120.00	0.50	0.50	<i>Anabaena sp. CPB4337</i>	No change
Gonzalez-Pleiter, et al., 2013		10900	<i>Raphidocelis subcapitata</i>	OECD 201				EC <sub>10</sub> ÷ 10	
Industry Data	Ofloxacin	100 <sup>b</sup>	<i>Anabaena flos-aquae</i>	OECD 201	10.00	0.50	0.50	<i>Anabaena flos-aquae</i> NOEC ÷ 10	No change
Bengtsson-Palme & Larsson, 2016	Oxacillin				N/A	1.00	1.00	No industry data	No change
Kolar et al., 2014	Oxytetracycline	1500	<i>Anabaena flos-aquae</i>	OECD 201	47.00	0.50	0.50	<i>Raphidocelis subcapitata</i>	Original PNEC <sub>ENV</sub> (18 µg/L) derived from non-standard study over 144 days, which is longer than a typical OECD 201 study and could introduce bias into the results. Removed from dataset as it does not meet testing criteria
Kolar et al., 2014		470	<i>Raphidocelis subcapitata</i>	OECD 201				EC <sub>10</sub> ÷ 10	
Bengtsson-Palme & Larsson, 2016	Pefloxacin				N/A	8.00	8.00	No industry data	No change
Industry Data	Penicillin G Procaine	160	<i>Anabaena flos-aquae</i>	OECD 201	16.00	0.25	0.25	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	New industry data added (originally listed as benzylpenicillin)
Industry Data		>100000	<i>Raphidocelis subcapitata</i>	OECD 201					



Source for Publication	API	EC <sub>10</sub> (µg/L)	Species	Test Guideline / Reference	PNEC <sub>ENV</sub> (µg/L)	PNEC <sub>MIC</sub> (µg/L)	Lowest Value (µg/L)	PNEC <sub>ENV</sub> Rationale	Revisions Since Last Version
Bengtsson-Palme & Larsson, 2016	Phenoxymethylpenicillin				N/A	0.06	0.06	No industry data	No change
Industry Data	Piperacillin	43	<i>Anabaena flos-aquae</i>	OECD 201	4.30	0.50	0.50	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	Industry testing completed
Industry Data	Polymixin B	0.57	<i>Anabaena flos-aquae</i>	OECD 201	0.06	N/A	0.06	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	Original PNEC <sub>ENV</sub> (9 µg/L) based off NOEC, EC <sub>10</sub> used preferentially
Industry Data		7.6	<i>Raphidocelis subcapitata</i>	OECD 201					
Industry Data	Pristinamycin	N/A	<i>Anabaena flos-aquae</i>	OECD 201	Testing on-going	N/A	N/A	Industry testing on-going	Added; New industry testing initiated/on-going
Industry Data	Puromycin	310	<i>Daphnia magna</i>	OECD 211	31.00	N/A	31.00	<i>Daphnia magna</i> EC <sub>10</sub> ÷ 10	Added; Industry testing completed
Industry Data		8650	<i>Synechococcus leopoliensis</i>	OECD 201					
Bengtsson-Palme & Larsson, 2016	Retapamulin				N/A	0.06	0.06	No industry data	No change
Industry Data	Rifampicin	N/A	<i>Anabaena flos-aquae</i>	OECD 201	Testing on-going	0.06	0.06	Industry testing on-going	Industry testing initiated/on-going
Industry Data	Rifamycin	N/A	<i>Anabaena flos-aquae</i>	OECD 201	N/A	N/A	N/A	Industry testing on-going	Added; Industry testing initiated/on-going
Industry Data	Rifaximin	N/A	<i>Anabaena flos-aquae</i>	OECD 201	N/A	N/A	N/A	Industry testing on-going	Added; Industry testing initiated/on-going
Industry Data	Roxithromycin	68.4	<i>Anabaena flos-aquae</i>	OECD 201	6.80	1.00	1.00	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	Industry testing completed
Bengtsson-Palme & Larsson, 2016	Secnidazole				N/A	1.00	1.00	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Sparfloxacin				N/A	0.06	0.06	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Spectinomycin				N/A	32.00	32.00	No industry data	No change
Industry Data	Spiramycin	250	<i>Raphidocelis subcapitata</i>	OECD 201	1.09	0.50	0.50	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	Industry testing completed
Industry Data		10.9	<i>Synechococcus leopoliensis</i>	OECD 201					
Bengtsson-Palme & Larsson, 2016	Streptomycin				N/A	16.00	16.00	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Sulbactam				N/A	16.00	16.00	No industry data	No change
Industry Data	Sulfadiazine	7200	<i>Anabaena flos-aquae</i>	OECD 201	11.21	13.00	11.21		

Source for Publication	API	EC <sub>10</sub> (µg/L)	Species	Test Guideline / Reference	PNEC <sub>ENV</sub> (µg/L)	PNEC <sub>MIC</sub> (µg/L)	Lowest Value (µg/L)	PNEC <sub>ENV</sub> Rationale	Revisions Since Last Version
Industry Data		30	<i>Raphidocelis subcapitata</i>	OECD 201				Geomean of <i>Raphidocelis subcapitata</i> EC <sub>10</sub> ÷ 10	New industry data added (PNEC <sub>ENV</sub> was 720 µg/L)
Industry Data		419	<i>Raphidocelis subcapitata</i>	OECD 201					
Ferrari et al., 2004	Sulfamethoxazole	90 <sup>c,i</sup>	<i>Raphidocelis subcapitata</i>	ISO 8692	0.60	16.00	0.60	<i>Synechococcus leopoliensis</i> NOEC ÷ 10	No change
Ferrari et al., 2004		5.9 <sup>c</sup>	<i>Synechococcus leopoliensis</i>	ISO 8692					
Industry Data	Tedizolid	98	<i>Anabaena flos-aquae</i>	OECD 201	3.20	N/A	3.20	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	Original PNEC <sub>ENV</sub> (9.8 µg/L) based off AFA but fish more sensitive
Industry Data		600	<i>Daphnia magna</i>	OECD 211					
Industry Data		31.75	<i>Pimephales promelas</i>	OECD 210					
Industry Data	Teicoplanin	129	<i>Anabaena flos-aquae</i>	OECD 201	12.90	0.50	0.50	<i>Anabaena flos-aquae</i> EC <sub>10</sub> ÷ 10	Industry testing completed
Industry Data	Telithromycin	N/A	<i>Anabaena flos-aquae</i>	OECD 201	Testing on-going	0.06	0.06	Industry testing on-going	Industry testing initiated/on-going
Gonzalez-Pleiter, et al., 2013	Tetracycline	2500	<i>Anabaena sp. CPB4337</i>	OECD 201	3.20	1.00	1.00	<i>Raphidocelis subcapitata</i> EC <sub>10</sub> ÷ 10	No change
Gonzalez-Pleiter, et al., 2013		32	<i>Raphidocelis subcapitata</i>	OECD 201					
Bengtsson-Palme & Larsson, 2016	Thiamphenicol				N/A	1.00	1.00	No industry data	Original PNEC <sub>ENV</sub> (10 µg/L) derived from non-standard study over 144 days, which is longer than a typical OECD 201 study and could introduce bias into the results. Removed from dataset as it does not meet testing criteria
Bengtsson-Palme & Larsson, 2016	Tiamulin				N/A	1.00	1.00	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Ticarcillin				N/A	8.00	8.00	No industry data	No change
Industry Data	Tigecycline	N/A	<i>Anabaena flos-aquae</i>	OECD 201	Testing on-going	1.00	1.00	Industry testing on-going	No change
Industry Data		2100	<i>Daphnia magna</i>	OECD 211					

Source for Publication	API	EC <sub>10</sub> (µg/L)	Species	Test Guideline / Reference	PNEC <sub>ENV</sub> (µg/L)	PNEC <sub>MIC</sub> (µg/L)	Lowest Value (µg/L)	PNEC <sub>ENV</sub> Rationale	Revisions Since Last Version
Industry Data		22	<i>Pimephales promelas</i>	OECD 210					
Industry Data		1650 <sup>†</sup>	<i>Raphidocelis subcapitata</i>	OECD 201					
Industry Data	Tildipirosin	4.2	<i>Anabaena flos-aquae</i>	OECD 201	0.42	N/A	0.42	<i>Anabaena flos-aquae</i>	No change
Industry Data		47	<i>Raphidocelis subcapitata</i>	OECD 201				EC <sub>10</sub> ÷ 10	
Industry Data	Tilmicosin	8	<i>Anabaena flos-aquae</i>	OECD 201	0.80	1.00	0.80	<i>Anabaena flos-aquae</i>	Industry data added
Industry Data		2600 <sup>c</sup>	<i>Raphidocelis subcapitata</i>	FDA 4.01				EC <sub>10</sub> ÷ 10	
Industry Data	Tobramycin	43	<i>Anabaena flos-aquae</i>	OECD 201	4.30	1.00	1.00	<i>Anabaena flos-aquae</i>	Original PNEC <sub>ENV</sub> (5.1 µg/L) based off NOEC, EC <sub>10</sub> used preferentially
Industry Data		360 <sup>c</sup>	<i>Daphnia magna</i>	OECD 211				EC <sub>10</sub> ÷ 10	
Industry Data		10000 <sup>b</sup>	<i>Pimephales promelas</i>	OECD 210					
Industry Data	Trimethoprim	8	<i>Anabaena flos-aquae</i>	OECD 201	312.45	0.50	0.50	<i>Anabaena flos-aquae</i>	New data from industry added; PNEC reduced from 560 µg/L based on geomean of all <i>Anabaena flos-aquae</i> EC <sub>10</sub> values
Industry Data		25000	<i>Anabaena flos-aquae</i>	OECD 201				EC <sub>10</sub> ÷ 10 <sup>a</sup>	
Kolar et al., 2014		26000	<i>Anabaena flos-aquae</i>	OECD 201					
Guo et al., 2016		18328 <sup>i</sup>	<i>Anabaena flos-aquae</i>	OECD 201					
Industry Data		100000 <sup>b</sup>	<i>Brachydanio rerio</i>	OECD 210					
Industry Data		100000 <sup>b</sup>	<i>Brachydanio rerio</i>	OECD 210					
Industry Data		5600	<i>Cerodaphnia dubia</i>	EPA 1002.0					
Guo et al., 2016		100000 <sup>b,i</sup>	<i>Chlorella vulgaris</i>	OECD 201					
Park and Choi, 2008		6000 <sup>b</sup>	<i>Daphnia magna</i>	OECD 211					
Guo et al., 2016		100000 <sup>b,i</sup>	<i>Desmodesmus subspicatus</i>	OECD 201					
Industry Data		32000 <sup>b</sup>	<i>Raphidocelis subcapitata</i>	OECD 201					
Guo et al., 2016		63371.05 <sup>b,i</sup>	<i>Raphidocelis subcapitata</i>	OECD 201					
Kolar et al., 2014		65000	<i>Raphidocelis subcapitata</i>	OECD 201					
Guo et al., 2016		28300 <sup>i</sup>	<i>Synechococcus leopoliensis</i>	OECD 201					
Bengtsson-Palme & Larsson, 2016	Trovafloxacin	N/A			N/A	0.03	0.03	No industry data	No change
Industry Data	Tulathromycin	N/A	<i>Anabaena flos-aquae</i>	OECD 201	Testing on-going	N/A	N/A	Industry testing on-going	Industry testing initiated/on-going
Guo et al., 2016	Tylosin	18.32 <sup>i</sup>	<i>Anabaena flos-aquae</i>	OECD 201	0.98	4.00	0.98	<i>Synechococcus leopoliensis</i> EC <sub>10</sub> ÷ 10 <sup>a</sup>	Original PNEC <sub>ENV</sub> (0.82 µg/L) based off NOEC, EC <sub>10</sub> used
Industry Data		47 <sup>c</sup>	<i>Anabaena flos-aquae</i>	OECD 201					
Guo et al., 2016		74390 <sup>b,i</sup>	<i>Chlorella vulgaris</i>	OECD 201					

Source for Publication	API	EC <sub>10</sub> (µg/L)	Species	Test Guideline / Reference	PNEC <sub>ENV</sub> (µg/L)	PNEC <sub>MIC</sub> (µg/L)	Lowest Value (µg/L)	PNEC <sub>ENV</sub> Rationale	Revisions Since Last Version
Guo et al., 2016		3710.21 <sup>i</sup>	<i>Desmodesmus subspicatus</i>	OECD 201					preferentially; geometric mean of 2 <i>S. leopoliensis</i> used
Guo et al., 2016		833.65 <sup>i</sup>	<i>Raphidocelis subcapitata</i>	OECD 201					
Industry Data		2600 <sup>b</sup>	<i>Raphidocelis subcapitata</i>	OECD 201					
Industry Data		9.60	<i>Synechococcus leopoliensis</i>	OECD 201					
Guo et al., 2016		10.08 <sup>i</sup>	<i>Synechococcus leopoliensis</i>	OECD 201					
Bengtsson-Palme & Larsson, 2016	Vancomycin				N/A	8.00	8.00	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Viomycin				N/A	2.00	2.00	No industry data	No change
Bengtsson-Palme & Larsson, 2016	Virginiamycin				N/A	2.00	2.00	No industry data	No change

<sup>a</sup> Geomean of most sensitive species used if EC<sub>10</sub> or NOEC values were within one (1) order of magnitude; otherwise, lowest value used preferentially

<sup>b</sup> Indicates reported value is a NOEC due to lack of dose-response observed in the study

<sup>c</sup> Indicates value is a NOEC; unknown if dose-response was observed in the study

<sup>d</sup> Reported value is a 24-hour EC<sub>10</sub> due to significant decreases observed in measured test concentrations at 48- and 72-hours

<sup>e</sup> *Anabaena flos-aquae* less sensitive in rangefinder study (*Anabaena flos-aquae* EC<sub>50</sub> > 500 µg/L)

<sup>f</sup> EC<sub>10</sub> value used preferentially instead of NOEC to calculate PNEC<sub>ENV</sub>

<sup>g</sup> 24-hour study

<sup>h</sup> 48-hour study

<sup>i</sup> 96-hour study

### APIs Removed from the Original Dataset

API	Rationale
Benzylpenicillin	Merged with Penicillin G Procaine
Clavulanic Acid	Not an antibiotic
Sulfadimethoxine	Data not available for Cyanobacteria; does not meet criteria for inclusion
Sulfadoxine	Data not available for Cyanobacteria; does not meet criteria for inclusion
Tazobactam	Not an antibiotic ( $\beta$ -lactamase inhibitor)
Lomefloxacin	No data available
Oxolinic Acid	No data available
Itraconazole	Antifungal; out of scope

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