

Radiation Doses for UV-C water disinfection

The following values [J/m²] relate to an inactivation rate of 90% (Log 1 reduction) at a wavelength of 254 nm, where UV radiation is particularly effective against bacteria. A reduction of 99% can be achieved by multiplying the dose by 2. A reduction of 99.9%, by multiplying the dose by 3, etc.

Bold characters mean that it belongs to certain families of microbes. The doses are averaged values obtained from literature. It is important to consider that these values are indicative. Exact doses can only be acquired through actual testing.

Bacteria

Acinetobacter		tularensis NY98	14	Shigella sonnei	25
baumannii	33	Haemophilus		Staphylococcus	
Aeromonas		influenzae Rd	13	aureus	44
salmonicida	15	Halobacterium		Streptococcus	
hydrophila	11	salibarum	94	faecalis	93
Arthrobacter		Halomonas		faecium	45
nicotinovorans	80	elongata	9	Streptomyces	
Bacillus		Helicobacter		coelicolor	60
anthracis Sterne spores	307	pylori	39	griseus	65
anthracis Ames spores	250	Klebsiella		griseus spores	85
cereus ATCC 11778 spores	520	pneumoniae	60	Thermoactinomyces	
cereus T spores	230	terrigena	35	vulgaris spores	550
cereus	60	Legionella		Vibrio	
pumilis spores	50	bozemanii	19	anguillarum	8
pumilis ASFUVC spores	1730	longbeachae	14	cholerae	10
pumilis ATCC 27142 spores	680	pneumophila - various strains	15	ordalii	18
subtilis	25	Listeria		parahaemolyticus	26
subtilis - various strains	184	monocytogenes	181	salmonicida	5
thuringiensis	2303	Moraxella	10965	Yersinia	
Brucella		Mycobacterium		enterocolitica	16
melitensis ATCC 23456	28	avium-intra	84	pestis	14
melitensis IL195	37	avium	58	ruckeri	8
suis K528	27	flaviscens	120		
suis MO562	17	fortuitum	82		
Burkholderia		intracellulare	75		
cenoccepacia	58	kansasii	80	Virus	
mallei M9	10	marinum	410	Adenovirus	
mallei M13	12	phlei	76	Canine hepatic	265
pseudomallei ATCC 11688	17	smegmatis	408	type 1	333
pseudomallei CA650	14	terrae	43	type 2 - various strains	385
Campylobacter		tuberculosis	60	type 4	511
jejuni	13	Myxobolus		type 15	396
Citrobacter		cerebralis	10011	type 40 - various strains	473
diversus	41	Proteus		type 41 - various strains	461
freundii	46	mirabilis	8	type 5 - various strains	452
Clostridium		Pseudomonas		type 6	395
pasteurianum spores	34	aeruginosa - various strains	47	AHNV	350
perfringens	38	diminuta	96	Avian	
tetani	49	maltophilia	70	influenza virus	26
Coxiella		putrefaciens	87	leukosis virus	631
burnetii	15	Rickettsia		sarcoma virus	268
Cylindrospermum		proWazekki	13	B. subtilis phage	
spores	140	Salmonella		029	70
Deinococcus		spp.	11	SP02c12	100
radiodurans	748	anatium	60	SPP1	195
Enterobacter		derby	36	Bacteriophage	
cloacae	64	enteritidis	33	B40-8	137
Enterococcus		infantis	20	F-specific	292
faecalis ATCC27285	37	typhi	22	MS2	223
faecalis DSM 20478	71	typhimurium	98	QB - various strains	368
faecium	70	Serratia		Berne Virus	13
Escherichia coli - various strains	31	marcescens	64	BF-NNV	501
Faecal		Shewanella		BLV	1010
coliforms	60	algae	9	Borna virus	79
streptococci	90	oneidensis	5	Bovine	
Francisella		putrefaciens	5	Calicivirus	95
tularensis LVS	13	Shigella		Parvovirus	35
		dysenteriae	12	Calicivirus	
				feline	60

