ISO 16075-5:2021 (E)

Guidelines for treated wastewater use for irrigation projects — Part 5: Treated wastewater disinfection and equivalent treatments

Contents

	Fore	eword
	Intro	oduction
1	Sco	pe
2	Norr	mative references
3	Tern	ns, definitions, and abbreviated terms
	3.1	Terms and definitions
	3.2	Abbreviated terms
4	Was	tewater pathogenic contaminants and their inactivation or removal
	4.1 4.2 4.3 4.4	General Type and occurrence of pathogens in wastewater Reduction of pathogenic microorganisms in various stages of wastewater treatment Reduction of pathogenic microorganisms by different disinfection methods
5	Disi	nfection
6	Che	mical disinfection
	6.1	General
	6.2	Disinfection by chlorine/bromine compounds
	6.2.1	General Control of the control of th
	6.2.2	Reactions of chlorine/bromine with ammonia
	6.2.3 6.2.4	Definition of the halogenated disinfection residuals
	6.2.5	Breakpoint reaction CT values of chlorine/bromide and their compounds
	6.2.6	Chlorinated compounds for TWW disinfection
	6.2.6.1	Chlorine (CI2)[3]
	6.2.6.2	Sodium and calcium disinfection agent hypochlorite ("liquid bleach" and "chlorine powder")
	6.2.6.3	Chlorine dioxide (CIO2)
	6.2.6.4	Chlorine production on site
	6.2.7	Advantages, disadvantages and technical considerations of chlorine biocides-based disinfection method
	6.2.8	Chlorination process
	6.2.9	Brominated compounds for TWW disinfection
	6.2.9.1	Sodium Bromide activated with hypochlorite
	6.2.9.2	Ammonium bromide activated with hypochlorite
	6.2.9.3	Stabilized bromine solution
	6.2.9.4 6.2.10	Bactebrom Advantages, disadvantages and technical considerations of brominated bissides based
		Advantages, disadvantages and technical considerations of brominated biocides-based disinfection method
	6.3	Ozone
	6.3.1	Chemistry of ozone disinfection
	6.3.2	Direct ozone reaction
	6.3.3	Indirect ozone reaction
	6.3.4 6.3.5	Advantages, disadvantages and technical considerations of Ozone disinfection method
	6.3.5 6.3.6	System configuration Monitoring of ozonation
	6.4	Environmental impacts of chemical disinfection
	6.4.1	Environmental impacts of chlorination/bromination disinfection
	J. T. I	= ooar impacto er emermatienzi erimitatien alemitetten

7		UV disinfection
	7.1 7.2 7.2.	General UV light technologies and how they work I General
	7.2.2	2 UV disinfection system components
	7.3	UV source
	7.3.	l General
	7.3.2	2 UV source protector
	7.4	Disinfection chamber
	7.5	Sensors
	7.5.	UV intensity sensors
	7.5.2	2 UV transmittance sensors
	7.6	Ballasts
	7.7	UV validation
	7.8	The effectiveness of a UV disinfection system
	7.9	Cleaning
	7.10	.
	7.11	Advantages, disadvantages and technical considerations of UV disinfection method
8		Removal of pathogens by membrane methods
	8.1	General
	8.2	Membrane system
	8.3	Pathogen removal by membrane filtration
	8.4	Considerations for operation and maintenance
	8.5	Monitoring .
	8.6	Environmental impacts of membrane systems
	8.7	Advantages, disadvantages and technical considerations of pathogens removal by membrane systems disinfection method
Annex	Α	(informative) Infection agents potentially present in untreated (raw) wastewater
Annex	В	(Informative) Microbial removal performance by various membrane filtration
Annex	C	(Informative) Bromine further compounds
	C.1	BCDMH (Bromo-chloro-5,5-dimethylhydantoin)
	C.2	DBNPA (2,2-Dibromo-3-nitrilopropionamide)
	C.3	Advantages and disadvantages, bromide biocides
Annex	D	(informative) Factors in operation, maintenance and monitoring of membrane system
	D.1	Feedwater characteristics
	D.2	Management of membrane concentrate
	D.3	Maintenance
	D.3.	1 General
	D.3.	2 Mechanisms of membrane fouling
	D.4	Control of membrane fouling

Environmental impacts of ozonation disinfection

6.4.2

Page count: 41