

SANS 241-1:2015 Drinking Water Specification

The South African National Standard (SANS) 241 Drinking Water Specification states the minimum requirements for potable water to be considered safe for human consumption. The below tables outline these requirements. Requirements include microbiological, physical, aesthetic and chemical properties.

Microbiological determinands

Determinand	Unit	Risk	Standard Limit
E. coli / faecal coliforms	(count per 100 mL)	Acute health	Not Detected
Cryptosporidium spp	(count per 10 Litre)	Acute health	Not Detected
Giardia spp	(count per 10 Litre)	Acute health	Not Detected
Total Coliforms	(count per 100 mL)	Operational	≤10
Heterotrophic Plate Count	(count per 1 mL)	Operational	≤1000
Somatic Coliphages	(count per 10 mL)	Operational	Not Detected

Physical and Aesthetic determinands

Determinand	Unit	Risk	Standard Limit
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15
Conductivity @ 25°C	(mS / m)	Aesthetic	≤ 170
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200
Turbidity	(NTU)	Operational	≤ 1
Turbidity	(NTU)	Aesthetic	≤ 5
pH @ 25°C	(pH units)	Operational	≥ 5 to ≤ 9.7

Chemical Properties – Macro determinands

Determinand	Unit	Risk	Standard Limit
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5
Monochloramine	(mg / L)	Chronic health	≤ 3
Nitrate	(mg / L as N)	Acute health	≤ 11
Nitrite	(mg / L as N)	Acute health	≤ 0.9
Combined nitrate plus nitrite (2)	(mg / L as N)	Acute health	≤ 1
Sulfate	(mg / L as SO ₄)	Acute health	≤ 500
Sulfate	(mg / L as SO ₄)	Aesthetic	≤ 250
Fluoride	(mg / L as F)	Chronic health	≤ 1.5
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5
Chloride	(mg / L as Cl)	Aesthetic	≤ 300
Sodium	(mg / L as Na)	Aesthetic	≤ 200
Zinc	(mg / L as Zn)	Aesthetic	≤ 5

Chemical Properties – Micro determinands

Determinand	Unit	Risk	Standard Limit
Antimony	(µg / L as Sb)	Chronic health	≤ 20
Arsenic	(µg / L as As)	Chronic health	≤ 10
Barium	(µg / L as Ba)	Chronic health	≤ 700
Boron	(µg / L as B)	Chronic health	≤ 2400
Cadmium	(µg / L as Cd)	Chronic health	≤ 3
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50
Copper	(µg / L as Cu)	Chronic health	≤ 2000
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200
Iron	(µg / L as Fe)	Chronic health	≤ 2000
Iron	(µg / L as Fe)	Aesthetic	≤ 300
Lead	(µg / L as Pb)	Chronic health	≤ 10
Manganese	(µg / L as Mn)	Chronic health	≤ 400
Manganese	(µg / L as Mn)	Aesthetic	≤ 100
Mercury	(µg / L as Hg)	Chronic health	≤ 6
Nickel	(µg / L as Ni)	Chronic health	≤ 70
Selenium	(µg / L as Se)	Chronic health	≤ 40
Uranium	(µg / L as U)	Chronic health	≤ 30
Aluminium	(µg / L as Al)	Operational	≤ 300

Organic determinands

Determinand	Unit	Risk	Standard Limit
Total Organic Carbon	(mg / L)	Chronic health	≤ 10
Trihalomethanes:			
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60
Combined trihalomethanes (3)	(µg / L)	Chronic health	≤ 1
Total Mycrocystin	(µg / L)	Chronic health	≤ 1
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10

Risk

Required compliance to SANS 241:2015

Acute health microbiological	99.00%
Acute health chemical	99.00%
Chronic health	97.00%
Aesthetic	95.00%
Operational	95.00%