

# PERFORMANCE DATA SHEET

## K5 Drinking Water Station



### IMPORTANT

- Installation of this product must comply with all applicable laws.
- Provisions for an antisiphon air gap should be part of the installation to prevent a cross connection between the water system and the waste system.
- Do not use on water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Systems certified for cyst reduction may be used on disinfected water that may contain filterable cysts.
- Do not use on water that contains more than 0.1 ppm iron, more than 10 gpg hardness, more than 3000 ppm TDS or falls outside the pH range of 3 to 11.
- Do not use systems with sediment prefilters on water that contains chlorine.
- If a noticeable change in product water production, taste or odor occurs, contact your authorized Kinetico dealer.
- Models used for nitrate reduction are acceptable for treatment of influent concentrations of no more than 27 mg/L nitrate and 3 mg/L nitrite in combination measured as N and is certified for nitrate/nitrite reduction only for water supplies with a pressure of 280 kPa (40 psig) or greater (*with test kit – part no. 7329*). If you purchased your system specifically for nitrate reduction, Kinetico recommends periodic (quarterly) testing with a test kit #7329 to assure that nitrate/nitrites are being reduced to acceptable levels.
- This system shall only be used for arsenic reduction on chlorinated water supplies containing detectable residual free chlorine at the system inlet.

### SPECIFICATIONS

**Minimum/Maximum Operating Temperature:** 2°C-38°C (36°F-100°F)

**Ambient Temperature, Operating Conditions:** 32°C/90°F

**Minimum/Maximum Operating Pressure:** 241.3-827.37 kPa (35/120 psi)

**Discharge Water/Product Water Ratio:** 3 to 1

**Product Water Production Rate:** 77.22 L/day (20.4 gpd); 153.84 L/day (40.64 gpd) with the wow (Water Over Water) tank that employs QuickFlo® technology

### PERFORMANCE and MAINTENANCE

This reverse osmosis system contains a replaceable treatment component critical to the efficiency of the system. Replacement of the reverse osmosis component should be with one of identical specifications, as defined by the manufacturer, to ensure the same efficiency and contaminant reduction performance. This component is also critical for the effective reduction of total dissolved solids (TDS). Test the product water quarterly to verify that the system is performing satisfactorily. The flow from the faucet will shut off or slow to a trickle. This shut down prevents the effluent contaminant level from exceeding the EPA's maximum contaminant level under normal operating conditions. To restore service, replace both the prefilter and postfilter cartridges and any auxiliary cartridges that may be installed on your system. Annual replacement is recommended even if your system has not yet shut down. See chart below to select cartridges for your system. These cartridges are available through your local Kinetico dealer. You may opt to have the product water tested at this time to verify performance. For operation and maintenance information, consult the owner's manual. Installation instructions are available for review from your authorized Kinetico dealer.

### WARRANTY COVERAGE

The Kinetico K5 Drinking Water Station carries a limited manufacturer's warranty. If the Kinetico K5 Drinking Water Station is installed in conjunction with a Kinetico Water Conditioner, the warranty covers the parts of the Kinetico K5 Drinking Water Station for ten years and the reverse osmosis membrane for ten years. If the Kinetico K5 Drinking Water Station is installed without a Kinetico Water Conditioner, the K5 Drinking Water Station parts are covered for ten years and the membrane is covered for four years. For complete details, see the actual warranty. The warranty will be void if influent water conditions exceed those specified in the system parameters.

### Replacement Cartridges

Membrane Cartridge	Prefilter		MACGuard™ Postfilter
ALL WATER SUPPLIES (City Water or Well)	CHLORINATED WATER SUPPLY (City Water or Chlorinated Well)	NON-CHLORINATED WATER SUPPLY	ALL WATER SUPPLIES (CITY WATER OR WELL)
75 gpd/285 Lpd RO Membrane (Part No. 12752)	Carbon/Sediment Prefilter (Part No. 9461A)	Sediment Prefilter (Part No. 9309A)	Taste & Odor Postfilter (Part No. 9306B)

### Auxiliary Cartridges

Auxiliary Cartridge Name	Part Number	Auxiliary Position	Capacity	Comments
VOC Filter	9307A	#1 or #2	500	Removes volatile organic compounds.
Purefecta® Virus/Bacteria Guard	12873	#1	1500	The Purefecta® Guard must be used with the VOC Guard. For use as a certified microbiological purifier, the system can only be used with an air charge tank. When used with the water on water tank, the system must be installed on microbiologically safe water.
Arsenic Guard®	11781	#1 or #2	500	Works with the RO membrane to remove Arsenic III and Arsenic V. See the Arsenic facts section on page 8 of this document.
Perchlorate Guard	11682	#1 or #2	500	Removes perchlorate, a by-product of rocket fuel.
Chloramine Guard	13766	#1 or #2	500	Removes chloramine, a chemical used to treat approximately 1/3 of US municipal water sources.
Mineral Plus	13041	#1 or #2	500	Adds calcium and magnesium to your water.

### CONTAMINANT REDUCTION CAPABILITIES

**IMPORTANT NOTICE!** Read this performance data sheet and compare the capabilities of the K5 unit with your actual water treatment needs. Please note that the contaminants listed below are not necessarily in your water and that while testing was performed under standard laboratory conditions, actual performance may vary. It is recommended that before purchasing a water treatment unit, you have your water supply tested to determine your actual water treatment needs. The system has been tested according to NSF/ANSI 42 and 58 for reduction of the substances listed below. The concentration of the indicated substances in water entering the system was reduced to a concentration less than or equal to the permissible limit for water leaving the system, as specified in NSF/ANSI 58. The chart below contains the following information based on test results:

- A list of substances that will be reduced by a Kinetico K5 Drinking Water Station
- The percent of reduction that can be expected
- Conditions under which the units were tested (pressure, pH and temperature)
- Influent and effluent levels of contaminated tested water
- The EPA's maximum contaminant level (MCL)

**K5 Drinking Water Station**

SUBSTANCE	Test Pressure (psi)	Flow Rate (gpm)	Temperature (°F)	pH	Average Influent Level (mg/L)	Average Effluent Level (mg/L)	Maximum Effluent Level	Average percent Reduction	Minimum Percent Reduction	EPA MCL (mg/L)	Influent Challenge Concentration mg/L	Max. Permissible Effluent Concentrations Or Percent Reduction Requirement
Pentavalent Arsenic *	50	0.75	75.2	5.58	0.29	0.002	0.003	99.3	---	0.010	0.30 ± 10%	0.010
Barium	50	0.75	75.2	5.58	9.5	0.14	0.35	98.5	---	2.0	10.0 ± 10%	2.0
Hexavalent Chromium	50	0.75	75.2	5.58	0.30	0.007	0.013	97.7	---	.05	0.3 ± 10%	0.1
Trivalent Chromium	50	0.75	75.2	5.58	0.31	0.003	0.006	99.0	---	.05	0.3 ± 10%	0.1
Cadmium	50	0.75	75.2	5.58	0.031	0.0006	0.0011	98.1	---	0.005	0.03 ± 10%	0.005
Copper	50	0.75	75.2	5.58	3.0	0.038	0.069	98.7	---	---	3.0 ± 10%	1.3
Fluoride	50	0.75	75.2	5.58	8.6	0.39	0.51	95.5	96	4.0	8.0 ± 10%	1.5
Radium 226/228	50	0.75	75.2	5.58	25 pCi/L	5 pCi/L	5	80	---	5pCi/L	25pCi/L ± 10%	5 pCi/L
Selenium	50	0.75	75.2	5.58	0.10	<0.006	<0.006	>94	---	0.05	0.10 ± 10%	0.05
Lead	50	0.75	75.2	5.58	0.16	0.003	0.019	98.1	---	.015	0.15 ± 10%	0.010
Turbidity	50	0.75	75.2	5.58	11 NTU	0.08 NTU	0.26	99.3	97.9	---	11 ± 1 NTU	0.5 NTU

\* See page 6 for additional arsenic treatment facts.

**MTBE, Standard 53 Reduction Claims**



Substance	Influent challenge concentration mg/L	Maximum permissible product water concentration mg/L
alachlor	0.04 ± 10%	0.002
arsenic (pentavalent)	0.050 ± 10%	0.010
arsenic (pentavalent)	0.30 ± 10%	0.010
atrazine	0.009 ± 10%	0.003
barium	10 ± 10%	2
benzene	0.015 ± 10%	0.005
cadmium	0.03 ± 10%	0.005
carbofuran	0.08 ± 10%	0.04
carbon tetrachloride	0.015 ± 10%	0.005
chlordane	0.04 ± 10%	0.002
chlorobenzene	2.0 ± 10%	0.1
chromium (hexavalent)	0.3 ± 10%	0.1
chromium (trivalent)	0.3 ± 10%	0.1
chromium (hexavalent and trivalent)	0.3 ± 10%	0.05 (hexavalent) and 0.05 (trivalent)
copper	3.0 ± 10%	1.3
2,4-D	0.210 ± 10%	0.07
dibromochloropropane	0.004 ± 10%	0.0002
o-dichlorobenzene	1.8 ± 10%	0.6
p-dichlorobenzene	0.225 ± 10%	0.075
1,2-dichloroethane	0.015 ± 10%	0.005
1,1-dichloroethylene	0.021 ± 10%	0.007
cis-1,2-dichloroethylene	1.4 ± 10%	0.07
trans-1,2-dichloroethylene	2.0 ± 10%	0.1
1,2-dichloropropane	0.015 ± 10%	0.005
dinoseb	0.021 ± 10%	0.007
endrin	0.006 ± 10%	0.002
ethylbenzene	2.1 ± 10%	0.7

ethylene dibromide	0.001 ± 10%	0.00005
fluoride	8.0 ± 10%	1.5
heptachlor (H-34, heptox)	0.08 ± 10%	0.0004
heptachlor epoxide	0.004 ± 10%	0.0002
hexachlorocyclopentadiene	0.15 ± 10%	0.05
lead	0.15 ± 10%	0.010
lindane	0.002 ± 10%	0.0002
mercury	0.006 ± 10%	0.002
methoxychlor	0.12 ± 10%	0.04
methyl <i>tert</i> -butyl ether	0.015 ± 20%	0.005
nitrate plus nitrite	30 ± 10%	10
nitrate	27 ± 10%	10
nitrite	3 ± 10%	1
pentachlorophenol	0.01 ± 10%	0.001
polychlorinated biphenyls (PCBs, aroclor 1260)	0.01 ± 10%	0.0005
radon	4000 ± 1000 pCi/L	300 pCi/L
selenium	0.10 ± 10%	0.05
simazine	0.012 ± 10%	0.004
styrene	2.0 ± 10%	0.1
2,4,5-TP(silvex)	0.15 ± 10%	0.05
tetrachloroethylene	0.015 ± 10%	0.005
toluene	3.0 ± 10%	1
toxaphene	0.015 ± 10%	0.003
1,2,4-trichlorobenzene	0.21 ± 10%	0.07
1,1,1-trichloroethane	0.6 ± 10%	0.2
1,1,2-trichloroethane	0.015 ± 10%	0.005
trichloroethylene	0.300 ± 10%	0.005
TTHM (as chloroform)	0.45 ± 20%	0.080
xylenes	30 ± 10%	10.0
turbidity	11 ± 1 NTU	0.5 NTU

### VOC, Standard 58 Reduction Claims

Substance	Influent challenge concentration mg/L	Maximum permissible product water concentration mg/L
alachlor	0.050	0.001
atrazine	0.100	0.003
benzene	0.081	0.001
carbofuran	0.190	0.001
carbon tetrachloride	0.078	0.0018
chlorobenzene	0.077	0.001
chloropicrin	0.015	0.0002
2,4-D	0.110	0.0017
dibromochloropropane (DBCP)	0.052	0.00002
o-dichlorobenzene	0.080	0.001
p-dichlorobenzene	0.040	0.001
1,2-dichloroethane	0.088	0.0048
1,1-dichloroethylene	0.083	0.001
cis-1,2-dichloroethylene	0.170	0.0005
trans-1,2-dichloroethylene	0.086	0.001
1,2-dichloropropane	0.080	0.001
cis-1,3-dichloropropylene	0.079	0.001
dinoseb	0.170	0.0002
endrin	0.053	0.00059
ethylbenzene	0.088	0.001
ethylene dibromide (EDB)	0.044	0.00002
haloacetonitriles (HAN):		
bromochloroacetonitrile	0.022	0.0005
dibromoacetonitrile	0.024	0.0006
dichloroacetonitrile	0.0096	0.0002
trichloroacetonitrile	0.015	0.0003

haloketones (HK):		
1,1-dichloro-2-propanone	0.0072	0.0001
1,1,1-trichloro-2-propanone	0.0082	0.0003
heptachlor	0.025	0.00001
heptachlor epoxide	0.011	0.0002
hexachlorobutadiene	0.044	0.001
hexachlorocyclopentadiene	0.060	0.000002
lindane	0.055	0.00001
methoxychlor	0.050	0.0001
pentachlorophenol	0.096	0.001
simazine	0.120	0.004
styrene	0.150	0.0005
1,1,2,2-tetrachloroethane	0.081	0.001
tetrachloroethylene	0.081	0.001
toluene	0.078	0.001
2,4,5-TP (silvex)	0.270	0.0016
tribromoacetic acid	0.042	0.001
1,2,4-trichlorobenzene	0.160	0.0005
1,1,1-trichloroethane	0.084	0.0046
1,1,2-trichloroethane	0.150	0.0005
trichloroethylene	0.180	0.001
trihalomethanes (includes):		
chloroform (surrogate chemical) bromoform bromodichloromethane chlorodibromomethane	0.300	0.015
xylenes (total)	0.070	0.001

 <b>C</b> <b>US</b>	<p>Tested and certified by NSF International and WQA against NSF/ANSI Standards 42, 53 and 58 for the reduction of claims specified on the Performance Data Sheet. Conforms to CSA Standard B483.1 - Drinking Water Treatment Systems (refer to the Performance Data Sheet for individual contaminants and reduction performance).</p>	 <b>C</b> <b>USA</b>
<p>Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Systems certified for cyst reduction may be used on disinfected water that may contain filterable cysts.</p> <p>The Kinetico K5 Drinking Water Station is acceptable for treatment of influent concentrations of no more than 27 mg/L nitrate and 3 mg/L nitrite in combination measured as N and are certified for nitrate/nitrite reduction only for water supplies with a pressure of 280 kPa (40 psi) or greater.</p> <p>NSF International certified our product performance, and reviewed our manufacturing facility and procedures to assure product consistency and integrity. They also assure that our literature accurately reflects our product capabilities. The system and installation must comply with state/provincial and local laws and regulations.</p> <p>* The K5 system with Purefecta cartridge is tested and certified by the WQA against NSF P231—Microbiological Water Purifiers. See Purefecta data sheet for specifics. The K5 system is certified by the WQA against NSF P231-Microbiological Water Purifiers based on the recommendations set forth in the USEPA Guide Standard and Protocol for Microbiological Water Purifiers (OPP Task Force Report, 1987). The K5 with the Purefecta cartridge is not intended to convert wastewater or raw sewage into drinking water.</p> <p>Conforms to NSF/ANSI 58 for pentavalent arsenic reduction. See performance data sheet and Arsenic facts sheet section for an explanation of reduction performance. The following cartridges are not NSF or WQA Certified: Arsenic Guard, Perchlorate Guard, Chloramine Guard, and Mineral Plus.</p> <p>This system has been tested for the treatment of water containing pentavalent arsenic (also known as As(V), As(+5), or arsenate) at concentrations of 0.30 mg/L or less. This system reduces pentavalent arsenic, but may not remove other forms of arsenic. This system is to be used on water supplies containing a detectable free chlorine residual or on water supplies that have been demonstrated to contain only pentavalent arsenic. Treatment with chloramine (combined chlorine) is not sufficient to ensure complete conversion of trivalent arsenic to pentavalent arsenic. Please see the Arsenic Facts section of the Performance Data Sheet for further information.</p>		
U.S. Patent numbers 4,698,164; ,629,568; 4,650,586 Canadian Patent number 1,323,310		

**GENERAL SPECIFICATIONS (ALL MODELS):**

Minimum/Maximum Operating Temperature: 2°C - 38°C (36°F - 100°F)  
 Ambient Temperature, Operating Conditions: 32°C (90°F)  
 Minimum/Maximum Operating Pressure: 241.3 - 827.37 kPa (35 -120 psi)

**MODEL SPECIFIC INFORMATION:**

Model Name: K5 Drinking Water Station with 3 Gallon WOW Tank  
 Product Water Production Rate (Daily Production Rate): 40.64 gpd (153.84 Lpd)  
 Recovery Rating\*: 39.93%  
 Efficiency Rating\*\*: 24.37%

SUBSTANCE	Test Pressure (psi)	Flow Rate (gpm)	Temperature (°F)	pH	Average Influent Level (mg/L)	Average Effluent Level (mg/L)	Maximum Effluent Level	Average percent Reduction	Minimum Percent Reduction	EPA MCL (mg/L)	Influent Challenge Concentration mg/L	Max. Permissible Effluent Concentrations Or Percent Reduction Requirement
Nitrate/Nitrite both as N	50	0.75	77	7.42	31	7.3	11	76.1	---	10	30.0 ±10%	10
Nitrate-N	50	0.75	77	7.42	28	6.7	9.8	75.8	---	10.0	27.0 ±10%	10.0
Nitrite-N	50	0.75	77	7.42	2.8	0.66	0.87	76.8	---	1.0	3.0±10%	1.0
TDS ***	50	0.75	75.2	5.58	770	48	61	93.7	90	500	750±40	187 mg/L/ 75%
Cyst	50	0.75	75.2	7.41	160000/mL	8/mL	24/mL	99.99	99.98	---	Minimum 50000/mL	99.95%

Model Name: K5 Drinking Water Station with 3 Gallon Standard Tank  
 Product Water Production Rate (Daily Production Rate): 20.40 gpd (77.22 Lpd)  
 Recovery Rating\*: 43.23%  
 Efficiency Rating\*\*: 23.80%

SUBSTANCE	Test Pressure (psi)	Flow Rate (gpm)	Temperature (°F)	pH	Average Influent Level (mg/L)	Average Effluent Level (mg/L)	Maximum Effluent Level	Average percent Reduction	Minimum Percent Reduction	EPA MCL (mg/L)	Influent Challenge Concentration mg/L	Max. Permissible Effluent Concentrations (mg/L) Or Percent Reduction Requirement
Nitrate/Nitrite both as N	50	0.75	77	7.42	31	7.3	11	76.1	---	10.0	0.30 ±10%	10
Nitrate-N	50	0.75	77	7.42	28	6.7	9.8	75.8	---	10.0	27.0 ±10%	10
Nitrite	50	0.75	77	7.42	2.8	0.66	0.87	76.8	---	1.0	3.0±10%	1
TDS***	50	0.75	77	7.01	760	61	110	91.9	90	500	750±40	187mg/L/ 75%
Cyst	50	0.75	75.2	7.13	170000	5	16	>99.99	>99.99	---	Minimum 50000/mL	99.95%

\* Recovery Rating means the percentage of the influent water to the membrane portion of the system that is available to the user as reverse osmosis treated water when the system is operated without a storage tank or when the storage tank is by-passed.  
 \*\* Efficiency Rating means the percentage of the influent water to the system that is available to the user as reverse osmosis treated water under operating conditions that approximate typical daily usage.  
 \*\*\* TDS (Total Dissolved Solids) is commonly comprised of calcium, magnesium, sodium, iron, manganese, bicarbonate, chloride, sulfate and carbonate.



### **Arsenic Treatment System Facts**

This system has been tested for the treatment of water containing pentavalent arsenic (also known as As(V), As(+5), and arsenate) at concentrations of 0.30 mg/L or less. This system reduces pentavalent arsenic, but may not remove other forms of arsenic. This system is to be used on water supplies containing a detectable free chlorine residual at the system inlet or on water supplies that have been demonstrated to contain only pentavalent arsenic. Treatment with chloramine (combined chlorine) is not sufficient to ensure complete conversion of trivalent arsenic to pentavalent arsenic.

Arsenic (abbreviated As) is found naturally in some well water. Arsenic in water has no color, taste or odor. It must be measured by a lab test. Public water utilities must have their water tested for arsenic. You can get the results from your water utility. If you have your own well, you can have the water tested. Your local health department or state environmental health agency can provide a list of certified labs. The cost is typically \$15 to \$30. You can find information about arsenic in water on the Internet at the US Environmental Protection Agency website: [www.epa.gov/safewater/arsenic.html](http://www.epa.gov/safewater/arsenic.html).

There are two forms of arsenic: pentavalent arsenic (also called As(V), As(+5) and arsenate) and trivalent arsenic (also called As(III), As(+3) and arsenite). In well water, arsenic may be pentavalent, trivalent or a combination of both. Labs require special sampling procedures to determine what type and how much of each type of arsenic is in the water. Check with the labs in your area to see if they can provide this type of service.

Reverse osmosis (RO) water treatment systems do not remove trivalent arsenic from water very well. RO systems are very effective at removing pentavalent arsenic. A free chlorine residual will rapidly convert trivalent arsenic to pentavalent arsenic. Other water treatment chemicals such as ozone and potassium permanganate will also change trivalent arsenic to pentavalent arsenic. A combined chlorine residual (also called chloramine) may not convert all the trivalent arsenic. If you get your water from a public water utility, contact the utility to find out if free chlorine or combined chlorine is used in the water system.

The Kinetico K5 Drinking Water Station is designed to remove pentavalent arsenic. It will not convert trivalent arsenic to pentavalent arsenic. The system was tested in a lab. Under those conditions, the system reduced 0.30 mg/L (ppm) pentavalent arsenic to 0.010 mg/L (ppm) (the USEPA standard for drinking water) or less. The performance of the system may be different at your installation. Have the treated water tested for arsenic to check if the system is working properly.

You must periodically replace the RO component\* of the Kinetico K5 Drinking Water Station to ensure the system will continue to remove pentavalent arsenic. The component identification and locations where you can purchase the component are listed in this Performance Data Sheet, the Owner's Manual and the installation instructions for your system.

In most drinking water sources, the inorganic form of arsenic tends to be more predominant than organic forms. Inorganic arsenic in drinking water can exert toxic effects after acute (short-term) or chronic (long-term) exposure. Although acute exposures to high doses of inorganic arsenic can cause adverse effects, such exposures do not occur from public water supplies in the U.S. at the current MCL of 50 Qg/L. EPA's proposed drinking water regulation addresses the long-term, chronic effects of exposure to low concentrations of inorganic arsenic in drinking water. Chronic effects at low concentrations include:

- Cancer Effects: skin, bladder, lung and prostate cancer
- Non-cancer Effects: skin, pigmentation and keratosis, (callus-like skin growths seen earliest and most often), gastrointestinal, cardiovascular, hormonal (e.g. diabetes), hematological (e.g. anemia), pulmonary, neurological, immunological, reproductive/developmental functions.

The contamination of a drinking water source by arsenic can result from either natural or human activities. Arsenic is an element that occurs naturally in rocks and soil, water, air, plants and animals. Volcanic activity, the erosion of rocks and minerals and forest fires are natural sources that can release arsenic into the environment. Although about 90 percent of the arsenic used by industry in the United States is used for wood preservative purposes, arsenic is also used in paints, drugs, dyes, soaps, metals and semi-conductors. Burning fossil fuels and wastes, paper production, glass manufacturing, cement manufacturing, mining and smelting can also release arsenic. While arsenic can no longer be used in making pesticides, weed killers and embalming fluids, the Agency is aware that prior to this ban these substances have contributed to drinking water contamination.

\* See Warranty coverage on page 2.