

Send The Back Page contributions to P/SPN, Attn: The Back Page, 3923 W. 6th St., Ste. 407, Los Angeles, CA 90020 or e-mail your story ideas to psn@poolspanews.com.

Cut here



As a member of a competitive swim team, my daughter spends several hours a day in the water, both in our home pool and in the community pool. Her bathing suits need to be replaced every few weeks, and at close to \$50 per suit, we're going to go broke. Can anything be done to extend the life of a bathing suit?



After each swimming session, your daughter should wash her suit in a cleaner made specifically for swimsuits. (Try "Aqua Mate" by Peli-Guard or "Swimwear Cleaner" by Everything But Water.) Then spin the suit dry in an extractor or suit dryer. If neither is available at the pool, *don't* put the wet suit in a plastic bag or roll it up in a towel. Rather, hang the suit up and let it air dry to prevent mildew.

Another key influence on the life expectancy of a suit is the suit itself. The weight and quality of threads, elastics and fabrics all have a direct impact on how well a suit will hold up to repeated use and exposure to water, chemicals and sunlight.

To help prevent rapid suit disintegration, people who spend a lot of time in treated pool water should purchase swimsuits made of Lycra 128, rather than recreational swimsuits made with Lycra 146.

Lycra 128 has long, strong, flexible fiber strands that resist breaking when exposed to chlorine. The material is also resistant to body oils that break fibers. (Lycra is DuPont's trademark for its Spandex fiber, a polyester-based elastomer that is blended with other fibers to allow the bathing suit material to stretch.)

Another good choice is a suit made of a nylon fiber called Antron. Such suits are shiny, durable, resist fading from repeated washings and exposure to sunlight — and they dry quickly.

Dr. Alison Osinski owns Aquatic Consulting Services in San Diego. For more information, call her at the Swimming Pool Hotline between 8 a.m. and 6 p.m. Pacific time, (900) 446-6075, ext. 820. (Callers are billed \$2.95 per minute. You must be 18 years of age or older to call.)

**PLACE YOUR BUSINESS CARD HERE AND
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Here's something fun to do while you wait for your latest water-test results: a word-search game full of terms from the world of sanitation and oxidation. Words can be found in almost every direction — but always in a straight line!

Swimming Pool Word Search

Sanitation & Oxidation

C	B	A	B	R	O	M	A	M	I	N	E	H	E	O
M	C	C	R	K	L	X	H	I	J	G	O	Y	F	D
N	D	Y	E	I	O	D	I	N	E	C	R	P	O	Q
E	M	F	A	C	X	V	O	D	L	U	G	O	R	P
N	H	D	K	N	S	W	N	C	A	T	A	C	S	N
I	Z	Y	P	H	U	A	I	O	B	T	N	H	D	O
M	I	H	O	D	F	R	Z	G	E	R	I	L	V	I
A	J	C	I	K	A	O	A	C	E	I	C	O	E	T
R	K	K	N	C	N	C	T	T	B	C	L	R	N	A
O	M	L	T	E	R	R	I	H	E	H	M	I	T	T
L	N	O	P	E	U	Q	O	M	R	L	K	T	U	I
H	H	A	L	O	G	E	N	H	I	O	J	E	R	N
C	H	L	O	R	I	N	E	V	X	R	C	W	I	A
A	F	S	T	U	L	A	U	D	I	S	E	R	V	S
C	O	R	O	N	A	E	U	D	Y	C	X	B	Z	A

BCDMH	Corona	HOCL	ORP	Shock
Breakpoint	Cyanurate	Hypochlorite	Oxidation	THM
Bromamine	DPD	Iodine	Ozone	Trichlor
Chloramine	FAC	Ionization	Residual	UV
Chlorine	Halogen	Organic	Sanitation	Venturi

Battling buildup — despite the drought

Q: We haven't been able to drain and refill our pool as often as we'd like because of drought restrictions. Is there any way to lower TDS levels or reduce the buildup of cyanuric acid in the water without emptying the pool?

A: You might want to ask your pool service technician about renting a portable nanofiltration system.

Nanofiltration can be used to lower total dissolved solids (TDS) and cyanuric-acid levels so that a decrease in oxidation reduction potential and loss of sanitizer effectiveness does not occur.

It is possible to reduce unacceptably high levels of TDS and cyanuric acid — as well as sodium, chlorides, calcium, magnesium, copper, iron, lead and other heavy metals, nitrates, sulfates, phosphates, algae spores and some viruses, fungi and parasites — all without emptying a pool and disposing of heated, chemically treated water. Dissolved organics also can be eliminated, thereby preventing trihalomethane formation.

Nanofiltration is a secondary filtration process used in conjunction with your regular sand, diatomaceous-earth or cartridge pool filters. Nanofiltration technology has been around awhile, but only recently has it been applied to treating pool water.

Nanofilters operate at higher pressure than ultrafine and microfiltration systems and can remove smaller particles

from the water. Indeed, nanofilters can remove particles down to 0.001 microns in size or any impurities with molecular weights over 200.

Both portable and fixed, permanently installed nanofiltration systems are available. The systems consist of pumps, prefilters, membrane filters, hoses, electrical cords, flow meters, flow-adjustment and check valves, and pressure sensors and gauges.

Pool water is forced under pressure through semipermeable cellulose acetate membranes. Impurities are concentrated into 10 percent of the water, which is sent to waste. The remaining 90 percent of the water is returned to the pool.

The membranes are reusable and, after filtering approximately 300,000 gallons of pool water, can be washed with a solution of water and detergent or water and muriatic acid. The nanofilter membranes have a life expectancy of about four to six years.

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Illustration by Rick Laddy

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Here's a game that's sure to *absorb* your attention, and could be *hazardous* to your boredom! It's our **Chemical Safety** word-search game. Words listed below appear **PEL**-mel, but always in a straight line.

Swimming Pool Word Search

Chemical Safety

E	C	O	N	T	A	I	N	M	E	N	T	O	A	U
E	A	O	I	B	O	C	D	S	V	S	I	T	F	F
G	Y	H	R	I	K	X	J	D	I	H	N	A	L	M
P	L	E	S	R	M	N	I	S	T	O	C	M	A	P
L	Q	V	W	S	O	R	G	C	C	W	O	Z	M	S
A	U	I	A	A	L	S	N	U	A	E	M	A	M	U
C	E	T	L	L	S	T	I	C	E	R	P	H	A	O
A	T	C	L	V	A	H	T	V	R	U	A	K	B	D
R	B	E	O	A	B	P	A	Q	E	S	T	C	L	R
D	R	T	W	G	D	E	B	E	G	O	I	A	E	A
I	O	O	T	E	C	L	L	H	F	P	B	P	L	Z
K	S	R	J	L	M	L	E	N	O	X	L	R	A	A
A	B	P	E	S	T	I	C	I	D	E	E	E	H	H
G	A	L	A	S	O	P	S	I	D	U	Q	V	N	P
T	F	D	B	T	E	S	A	E	L	E	R	O	I	S

Absorb	Eyewash	Inhale	Placard	Salvage
Containment	Flammable	MSDS	Protective	Shower
Corrosive	Hazardous	Overpack	Reactive	Spill
Disposal	Hazmat	PEL	Release	Swallow
Exposure	Ignitable	Pesticide	RQ	Toxic
	Incompatible			

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Here's a *basic* word game that's *oversaturated* with fun and *balanced* with a little *hardness*. It's a Water Balance word search. Words run in a wide range of directions, but always in a straight line.

Swimming Pool Word Search

Water Balance

C	C	M	U	I	R	B	I	L	I	U	Q	E	P	A
D	A	A	G	G	R	E	S	S	I	V	E	B	R	E
E	C	L	R	E	R	U	T	A	R	E	P	M	E	T
T	B	K	C	B	N	O	I	S	O	R	R	O	C	A
A	E	A	F	I	O	N	I	Z	E	D	G	H	I	N
R	N	L	S	J	U	N	K	L	D	T	M	N	P	O
U	O	I	O	I	R	M	D	E	Q	U	C	R	I	B
T	I	N	S	B	C	T	C	I	S	A	E	H	T	R
A	T	I	O	R	R	N	P	H	O	I	C	V	A	A
S	A	T	D	U	A	A	W	Z	L	X	X	A	T	C
R	R	Y	A	L	S	N	C	E	B	O	I	C	E	I
E	U	D	A	C	I	D	G	K	E	F	R	D	G	B
V	T	B	S	H	I	N	J	E	I	K	L	I	E	M
O	A	N	H	H	A	R	D	N	E	S	S	T	D	S
P	S	C	A	L	I	N	G	O	R	T	H	S	U	E

Acid	Bicarbonate	Equilibrium	Oversaturated	Scaling
Aggressive	Brackish	Etch	pH	SI
Alkalinity	Calcium chloride	Hardness	Precipitate	Soda Ash
Balanced	Carbon dioxide	Ionized	Range	TDS
Basic	Corrosion	Langeller	Saturation	Temperature

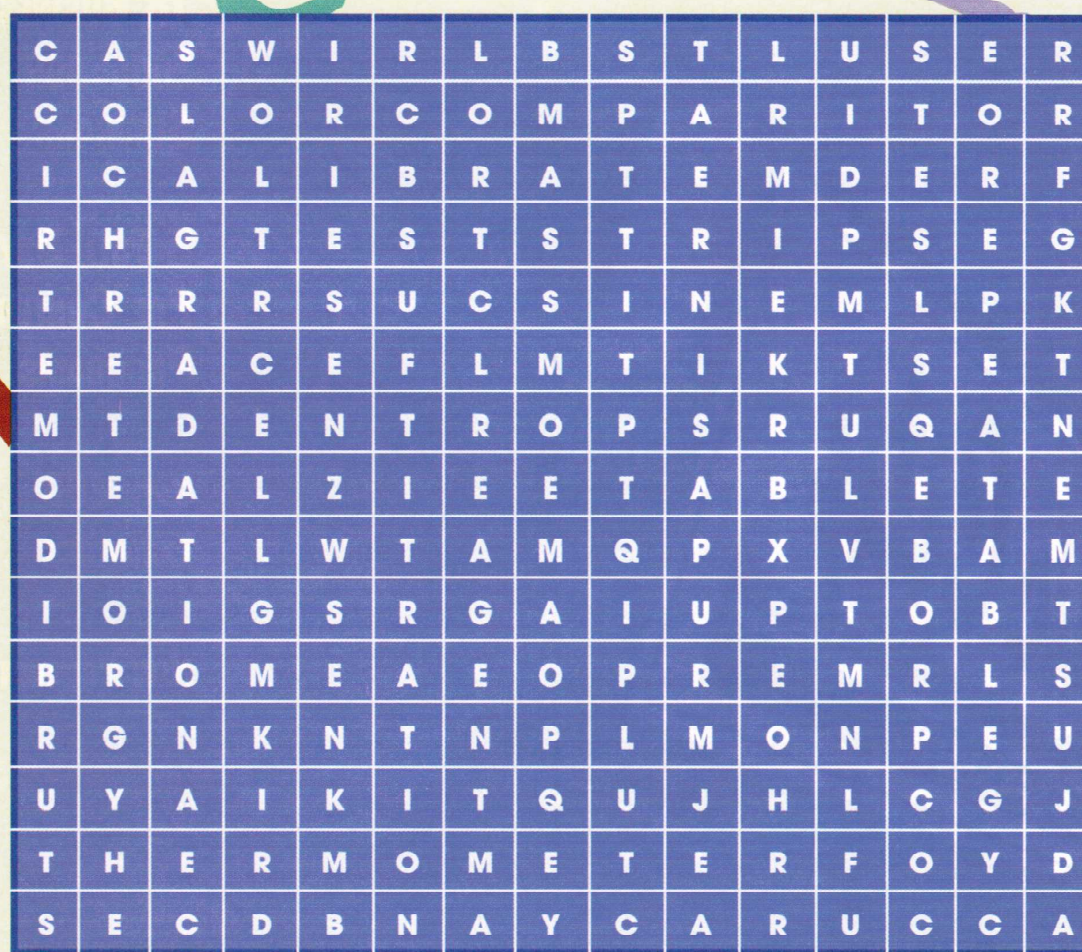
Swimming Pool Word Search

Water Testing & Analysis

By Dr. Alison Osinski

Owner, Aquatic Consulting Services

Probe the depths of this word search, *test* your skills, and see with what *accuracy* you can find its 25 hidden words on water testing and analysis. Words run in every direction, but they never *swirl* — they're always in a straight line.



Accuracy
Adjustment
Calibrate
Cell
Color comparator

Colorimeter
Frequency
Gradation
Hygrometer
Log

Meniscus
PPM
Probe
Reagent
Repeatable

Results
Sample
Shake
Swirl
Tablet

Test kit
Test strips
Thermometer
Titration
Turbidometric

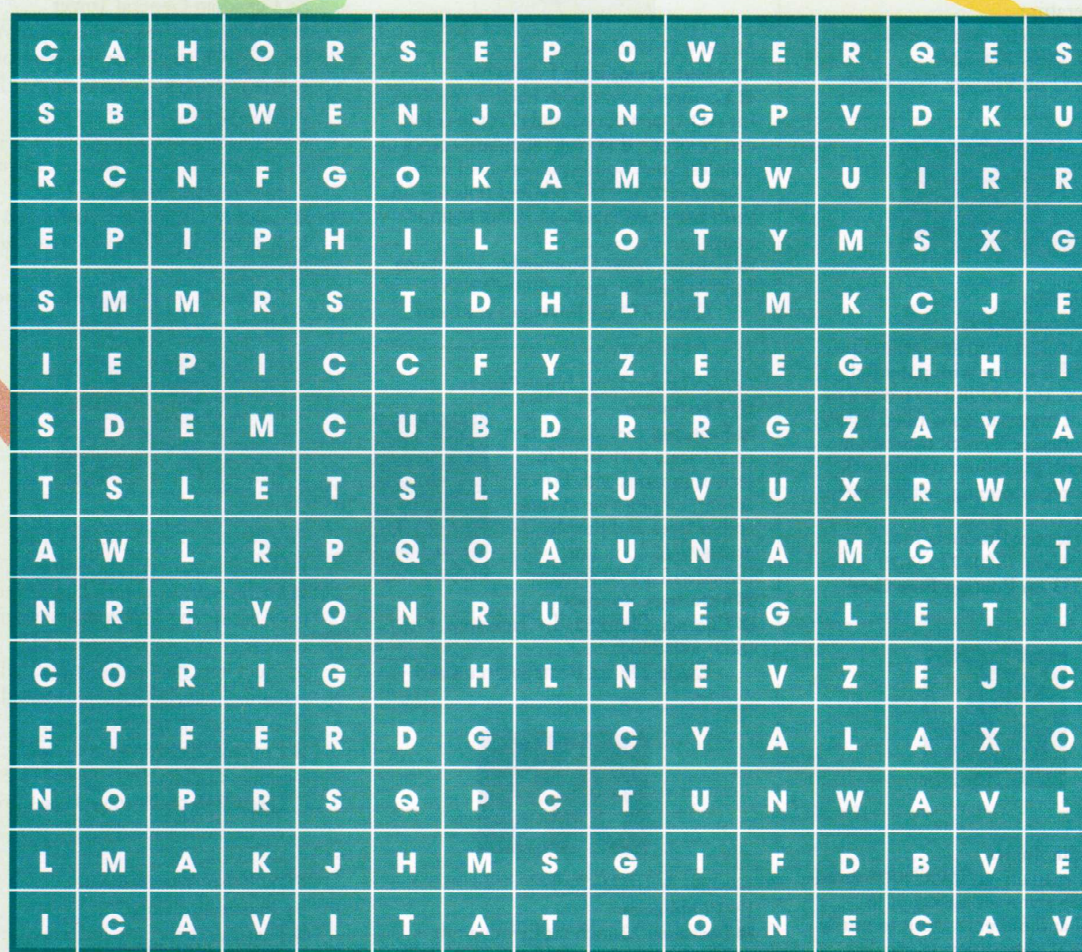
Swimming Pool Word Search

Water Testing & Analysis

By Dr. Alison Osinski

Owner, Aquatic Consulting Services

Experience a *surge* of inspiration as you locate all the words listed below. What better way to *prime* your *head*? Words run in every direction but are always in a straight line.



Cavitation
Circulate
Discharge
Gauge
GPM

Gutter
Head
Horsepower
Hydraulics
Impeller

Inlet
Motor
NTU
Pipe
Prime

PSI
Resistance
Skimmer
Suction
Surge

TDH
Turnover
Valve
Velocity
Weir

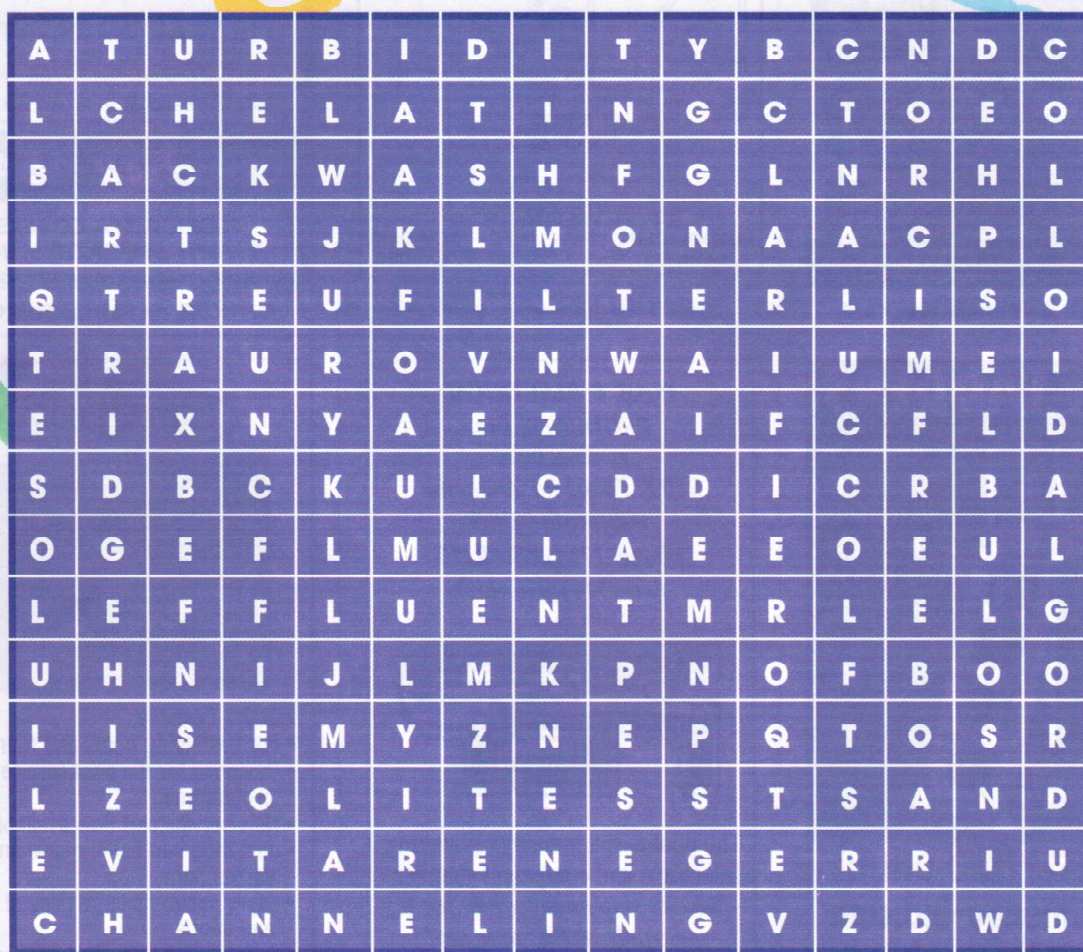
Swimming Pool Word Search

Filtration

By Dr. Alison Osinski

Owner, Aquatic Consulting Services

There's nothing *insoluble* about this puzzle — just start *channeling* your energy into finding the words listed below. Words run horizontally, vertically and diagonally.



Alum
Chelating
Enzymes
Insoluble
Sand

Backwash
Clarifier
Filter
Lateral
Septa

Cartridge
Colloidal
Flocculant
Media
Tank

Cellulose
Diatomaceous
Freeboard
Micron
Turbidity

Channeling
Effluent
Influent
Regenerative
Zeolite

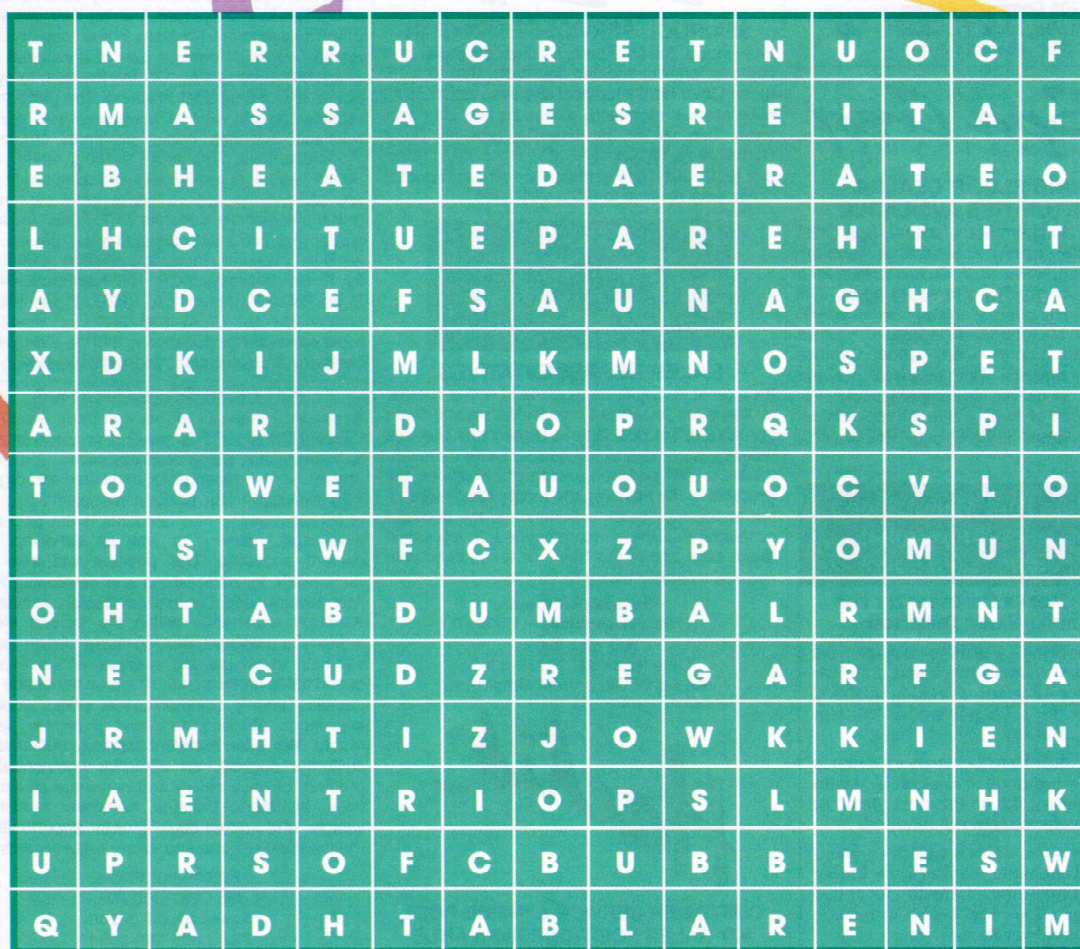
Swimming Pool Word Search

SPAS

By Dr. Alison Osinski

Owner, Aquatic Consulting Services

A good word search can be very *therapeutic* after a *heated* debate about the *hot tub* industry. Words run horizontally, vertically and diagonally.



Aerate
Bubbles
Counter current
Flotation tank
Furos

Heated
Hot tub
Hydrotherapy
Ice plunge
Jacuzzi

Jetted
Massage
Mineral bath
Mud bath
Relaxation

Rocks
Sauna
Soak
Steam Room
Swim spa

Therapeutic
Tiers
Timer
Warm
Whirlpool

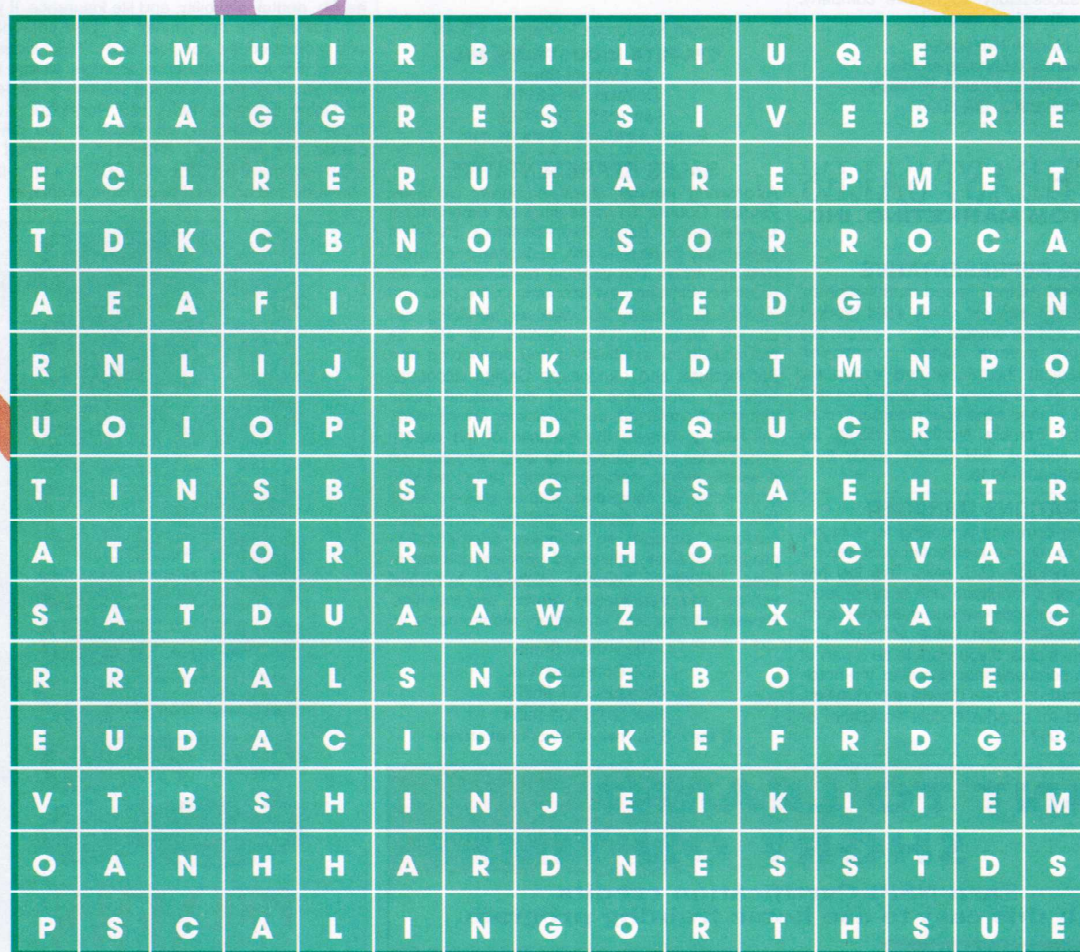
Swimming Pool Word Search

Water Balance

By Dr. Alison Osinski

Owner, Aquatic Consulting Services

This word search takes an *aggressive* look at a *range* of features that keep pool water *balanced*. Words run horizontally, vertically and diagonally.



Acid
Aggressive
Alkalinity
Balanced

Bicarbonate
Brackish
Calcium chloride
Carbon dioxide
Corrosion

Equilibrium
Etch
Hardness
Ionized
Langelier

Oversaturated
pH
Precipitate
Range
Saturation

Scaling
SI
Soda ash
TDS
Temperature

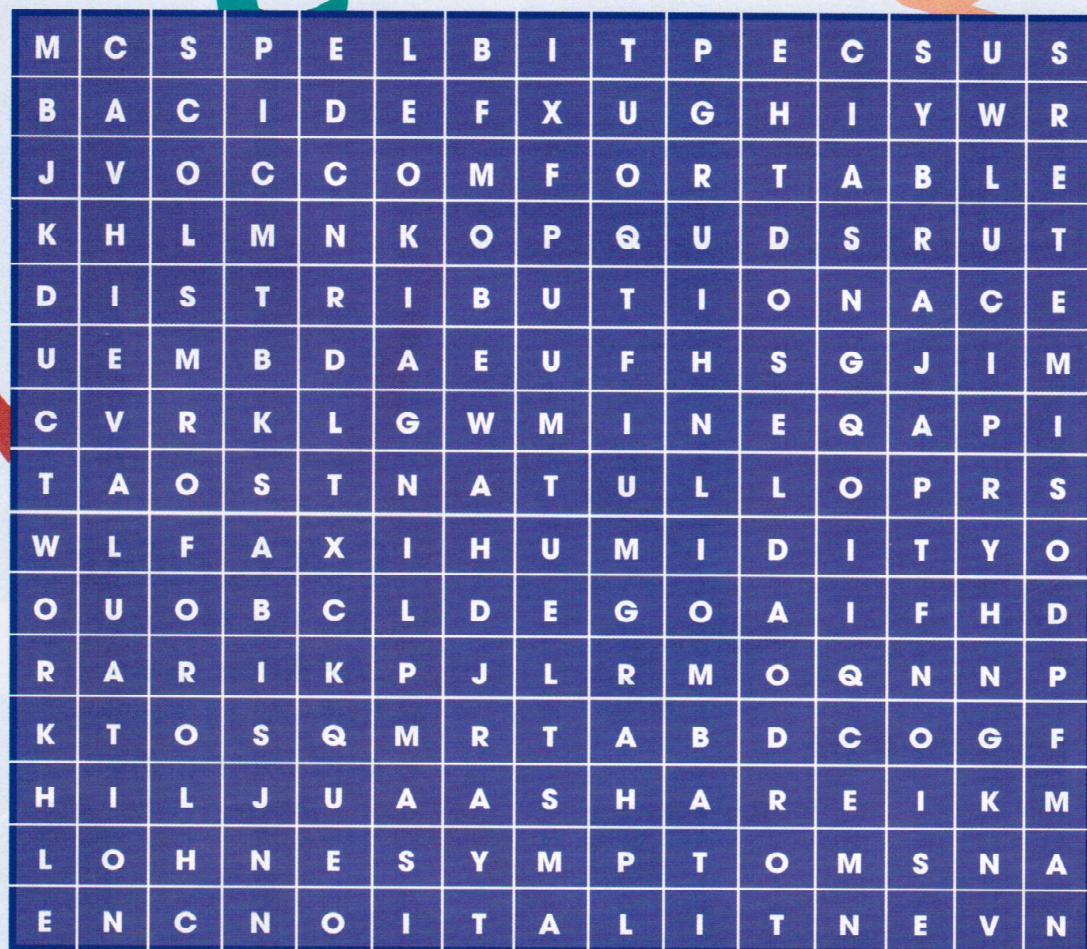
Swimming Pool Word Search

Indoor Air Quality

By Dr. Alison Osinski

Owner, Aquatic Consulting Services

If you want to keep the indoor air *comfortable* and free of *pollutants*, here's a *sampling* of things you need to know.



ASHARE
Chloroform
Comfortable
Distribution
Dose

Dosimeter
Ductwork
Evaluation
HP
Humidity

HVAC
IAQ
MCS
Noise
Odor

Pollutants
Sampling
Sick building
Susceptible
Symptoms

TLV
TWA
Ventilation
VOC
PEL

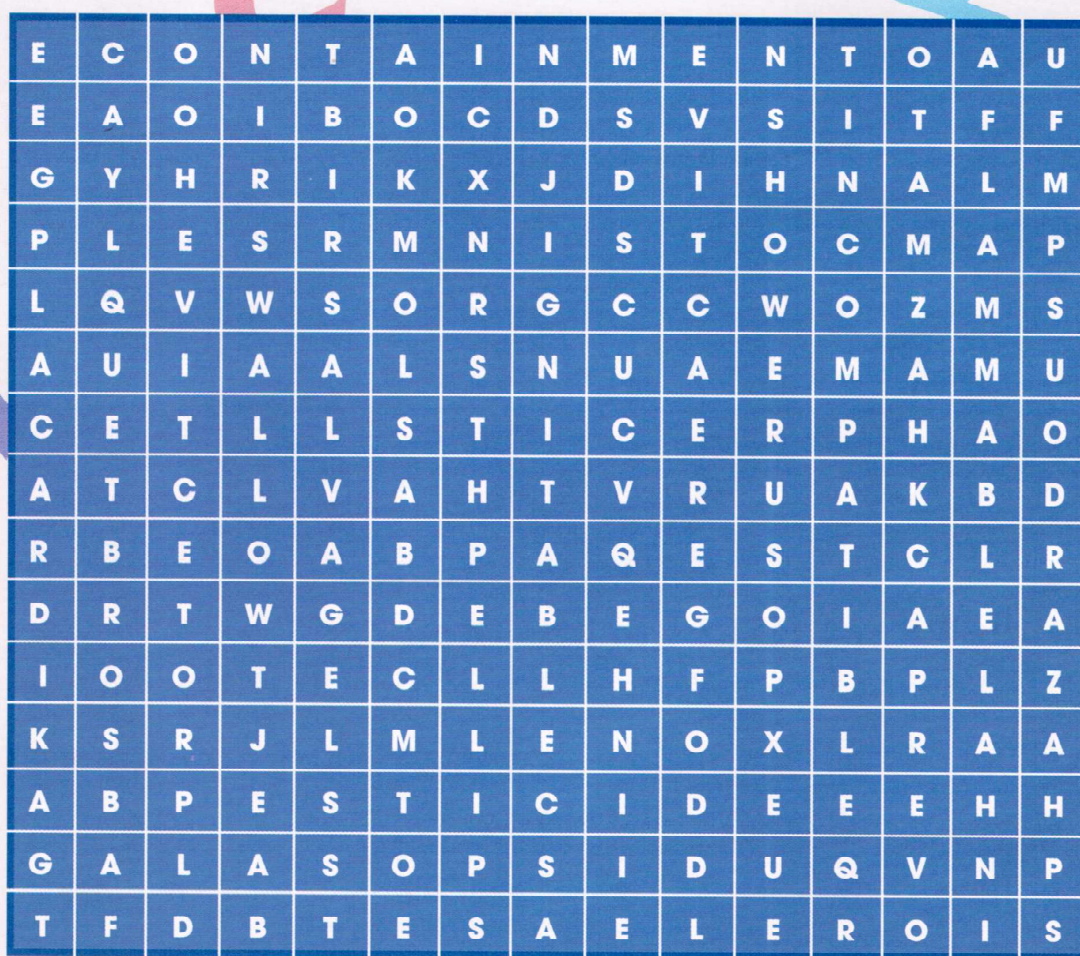
Swimming Pool Word Search

Chemical Safety

By Dr. Alison Osinski

Owner, Aquatic Consulting Services

Hopefully, you won't need *eyewash* as you *absorb* yourself in the *shower* of words which make up this chemical safety word search. Words run horizontally, vertically and diagonally.



Absorb
Containment
Corrosive
Disposal
Exposure

Eyewash
Hazardous
Hazmat
Ignitable
Incompatible

Inhale
MSDS
Overpack
PEL
Pesticide

Placard
Protective
Reactive
Release
RQ

Salvage
Shower
Spill
Swallow
Toxic

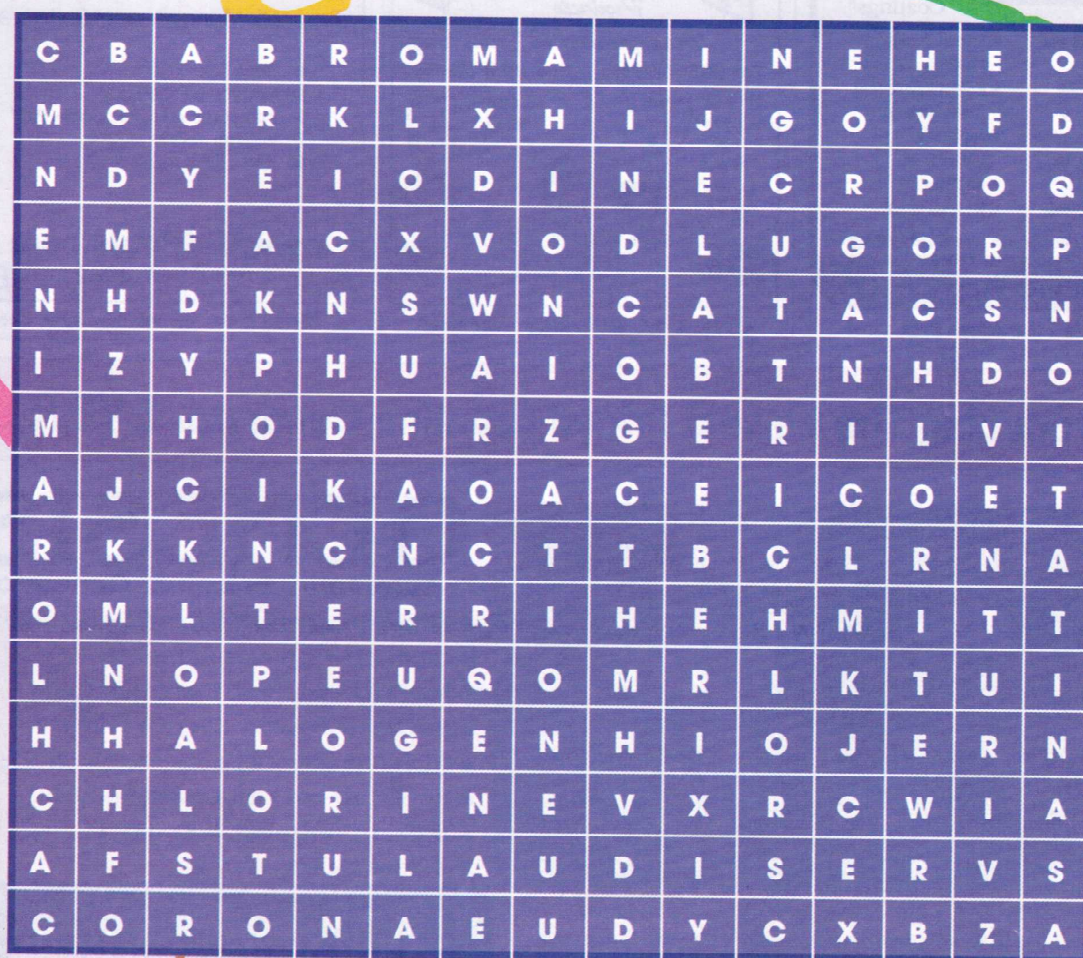
Swimming Pool Word Search

Filtration

By Dr. Alison Osinski

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There's nothing *insoluble* about this puzzle — just start *channeling* your energy into finding the words listed below. Words run horizontally, vertically and diagonally.



BCDMH
Breakpoint
Bromamine
Chloramine
Chlorine

Corona
Cyanurate
DPD
FAC
Halogen

HOCL
Hypochlorite
Iodine
Ionization
Organic

ORP
Oxidation
Ozone
Residual
Sanitation

Shock
THM
Trichlor
UV
Venturi