

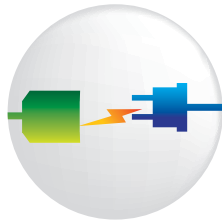
# Solving Commercial Pool Problems

Every commercial aquatics center is unique, and will have an individual set of circumstances that result in maintenance difficulties. How your pool is designed, what your facility's main activities are, what type of sanitation regime you implement - these are unique to your facility.

But there are some challenges that face many, if not all swimming pools.

## Common Pool Problems

Cost of Energy



Water Consumption

Heat Gain & Heat Loss



## What is Heatsavr™?

Heatsavr™ is a transparent liquid that spreads itself out over the surface of a body of water. When it is added to your pool, it creates a liquid barrier between the water and the air, which helps to reduce the rate of evaporation.

Since the average pool loses approximately 70% of its heat to evaporation, Heatsavr™ helps maintain the water temperature in any pool, saving heat, water and money to keep a pool's heater running.

## Heatsavr™

Heatsavr™, the liquid solar pool cover, will reduce evaporation on any swimming pool, regardless of shape, size or location. This will help to reduce heat loss and conserve water and energy.

Keep reading!

## Will it Work For You?

This guide is designed to help you identify which particular common problem is plaguing your facility, and then to discover how Heatsavr™ will be able to help solve that difficulty.

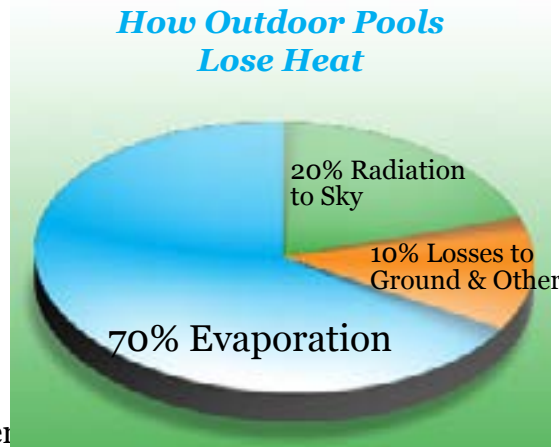
A liquid pool cover is not a miracle cure, but choose one of the topics below to find out if this guide offers just the solution you've been searching for.

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## Outdoor Heated Pools

### 1 Heat Loss

Did you know that, according to the US Department of Energy, approximately 70% of a pool's heat loss is due to evaporation? If you can devise a means of slowing evaporation, you will find that you require significantly less heat to maintain your water temperature.



### 2 Energy Consumption

Your pool heater is programmed to turn on whenever your pool water is below the desired temperature. The more heat your pool loses, the more often your pool heater consumes energy.

### 3 Heating Costs

Energy costs around the world are increasing, so anything that you can do to lower the amount of energy used at your facility will have a significant impact on your overall operations budget. Heating a swimming pool is one of the highest sources of energy consumption at most aquatics facilities.



**How Heatsavr™ Can Help** Heatsavr™ has been proven to save 15-35% of energy costs simply by lowering the rate of evaporation.

- 1 Heatsavr™ will reduce the amount of evaporation that your pool experiences, which will lower the amount of heat your water loses, especially overnight.
- 2 Heatsavr™ will help keep the heat generated by your heater in your pool, so that your heater does not have to work as hard or as long to maintain your desire temperature.
- 3 In 3rd party trial results, the average energy savings on heated pools using Heatsavr™, the liquid solar pool cover, have been between 10% - 35%.

## Pool Owners Are Seeing Results.

Not all pool facilities are set up to measure exact savings on their energy bills. But the ones that are have been excited to share their impressive savings:

### City of Thunder Bay Case Study

With the costs of energy on the rise, and a global awareness in environmental stewardship, the City of Thunder Bay saves approximately 40% in natural gas consumption and reduces annual greenhouse gas emissions by 56 tonnes.

### Hotel Valencia

I have been using Heatsavr on the hotel's 780 sq ft pool and spa now since May of 2008 and I can say without any hesitation that your product [Heatsavr] is saving at least 20 Therms a day and I would say as much as 35 Therms a day during these winter months.

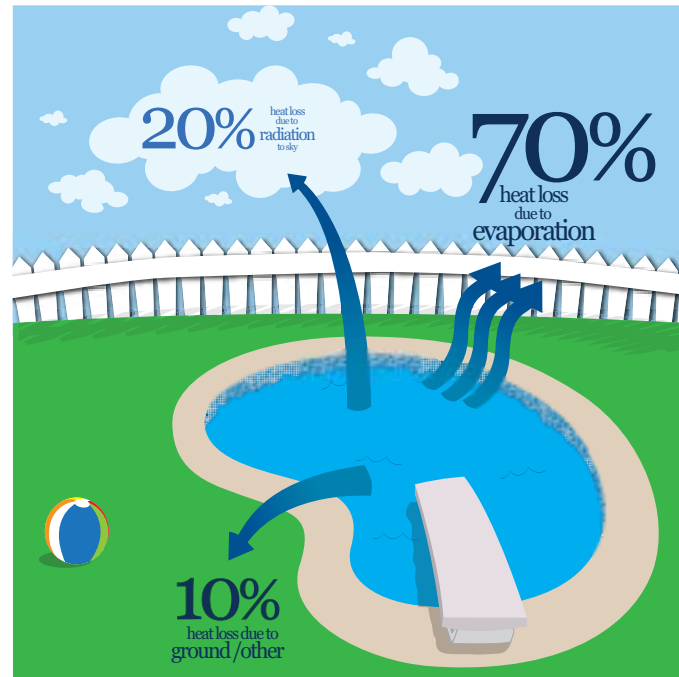
### Southern California Infinity Edge Pool

The pool is 1200 sq ft and is heated to 80 degrees F year round in southern California. January through March 2008 we burned through 3,685 therms (3,568 cu ft) at \$1.49 / therm according to the gas bill. From the same period in 2009, using Heatsavr, we burned through 2,929 therms (2,838 cu ft) at \$1.01 / therm. From January - March 2009 the pool consumed 756 therms less which is a 20.5% savings in volume of gas on a pool with an Infinity Edge.

## Outdoor Un-Heated Pools

### How Outdoor Swimming Pools Lose Heat

In many parts of the world, at least during certain parts of the season, it is not necessary to heat your pool. Many pools don't even have heaters as a contingency plan. However, even if the pool water gains enough heat during the day, it is often the case that overnight a large portion of that heat is lost due to cooler evening temperatures. Depending on the differential, you may find your water loses several degrees overnight.



### How Heatsavr™ Can Help

Studies have shown that Heatsavr™ will cut back overnight heat loss by approximately half, resulting in a gradual heat gain as you continue to use a liquid cover.

If you were able to retain that heat overnight, your water would be warmer in the morning, getting up to temp quicker each day, allowing for a gradual gain over a few days time. Of course, this would be limited to air temperatures, but every little bit helps.

By protecting your pool overnight with Heatsavr™, the liquid pool cover, you can retain up to 50% of your overnight heat loss. 50% can make a big difference when you jump in the pool in the morning.

Results from Trial conducted by the Professional Pool Operators of America

	No Cover	Hard Cover	Liquid Cover	Liquid Cover (with Heatsavr)
Average Day Temperature	92°	92°	92°	92°
Average Night Temperature	55°	55°	55°	55°
Max Water Temperature	70°	84°	82°	83°
Loss Overnight	12°	4°	0°	5°
Net Daily Results	0° lost	8° gain	6° gain	7° gain

## Pool Owners Are Seeing Results.

Sometimes you need to hear actual results before the reality of the potential savings truly makes an impact. Here are a few comments that current liquid pool cover users have shared:



Stevens Pointe Home Owners Ass.

We use a small amount of Heatsavr each night at 9:30pm right after the pool closes (the automatic distribution gizmo). Even with the colder than normal summer nights, we never dropped below 74 degrees (in the morning), and had virtually no heat loss (steam coming off the water) in the morning. I assume the product form a skim and kept the heat in (just like advertised). We keep the pool around 81 degrees during the day, and on the warmer summer nights last summer, the pool temperature would be 78 degrees in the morning. We never achieved those results using a solar cover.



M. Webb, OK pool owner

I have a 16 x 32 outdoor pool that is shaded the better part of the day...Even in 100+ degree weather, my pool would only get 82f. We wanted the pool to be a tropical 85f...At night I was losing 8+ degrees and my heater would run, even in the middle of July, to bring our pool back to desired temperature... We decided to take the chance and bought the HeatSavr unit. Once installed, we saw an overnight change in heat loss! The maximum loss we have experienced now is 2 degrees and the heater never runs. This little unit has paid for itself in only 3 months calculating electric and water loss.



J Kostich, Ohio pool owner

When I added the Heatsavr, the temperature of my water was 73 degrees F, and the temperature outside was 45 degrees F. There was a fog over the water that was so thick, you could barely see the water. Upon adding the Heatsavr, it was like watching a magic trick. The fog over the pool slowly went away as the thin film spread by itself over the pool. I absolutely couldn't believe it! After using your product for a couple of months now, I have seen a measurable and substantial lessening of water evaporating from the pool, and the pool water retains the heat resulting in the furnace kicking on and running less often!!

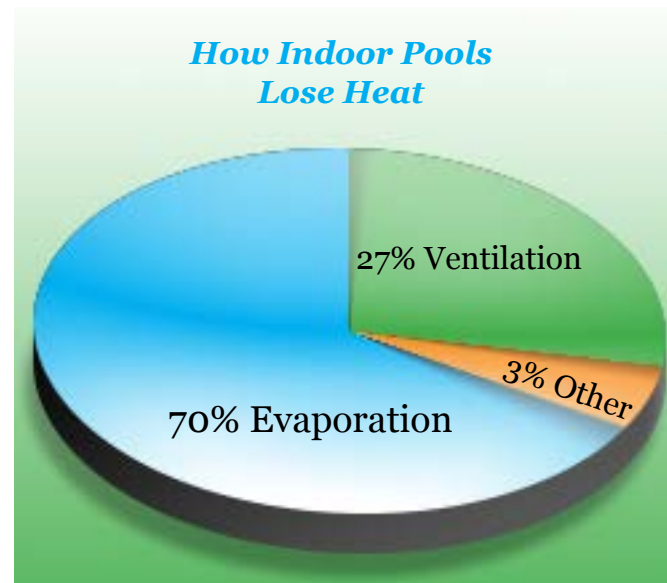
## Indoor Heated Pools

### 1 Air Quality

Even indoor swimming pools experience evaporation. In addition to being the primary reason for heat loss, evaporation also causes humidity levels to rise at any indoor pool environment. This can cause discomfort for visitors and employees in the pool area, and it can also lead to problems caused by moisture build-up, such as corrosion, water damage and even mold. Installing dehumidification systems to control the humidity can be a significant investment, and running the systems will be a consistent, long-term added operations cost.

### 2 Energy Consumption

Indoor aquatics facilities use a great deal of energy to maintain pool water temperature. Centers that also use dehumidification systems to control humidity levels and air quality will experience even higher energy consumption rates.



### 3 Costs of Operation

Energy costs around the world are increasing, so anything that you can do to lower the amount of energy used at your facility will have a significant impact on your overall operations budget. Heating a swimming pool is one of the highest sources of energy consumption at most aquatics facilities, and dehumidification systems used at indoor centres take operations costs even higher.

### Real Life Case Study

“About ten years ago, I discovered Heat Saver. What a great product! Not only did it save a lot of heat in the pool, it also reduce the humidity substantially! Because of the large reduction in evaporation, the dehumidifier can easily keep humidity under 50%. No more mold, no more water damage, no more indoor “rain”...also, my pool heating bills are substantially lower and my water bill is less as well. All in all, Heat Saver has been a “life saver” for me.”

Carolyn Butler  
Coyote Partnership, Yuma AZ



## How Heatsavr™ Can Help

Studies show that Heatsavr™ can reduce operating costs at indoor aquatics facilities by up to 40%, simply by reducing evaporation rates and lowering the associated costs.

Indoor swimming pools experience a variety of benefits by using a liquid solar pool cover like Heatsavr™.

Most indoor pools are heated, so they stand to reduce their heating costs up by to 40%. Additionally, controlling humidity levels in in indoor aquatic environment can sometimes be difficult. The high levels of evaporation frequently result in undesirable condensation. Liquid pool covers can reduce the humidity levels of the area, by lowering the rate of evaporation.

One more added benefit is water conservation, and the ability to also lower your water bill.

### What a Difference a Liquid Pool Cover can Make!



# Waterparks, Freeform Pools & Water Features

Many aquatics centres are creatively constructed with unique designs to make them stand out against the other swimming pools open to the public. Features that cut against the norm, however, may increase operations costs at these facilities.

## Waterparks



Waterparks usually have a great deal of surface area to cover, and more often than not, do not have ability to cover it. With water features all over the place, plastic pool covers are simply not an option, but keeping the water warm enough for swimmers is crucial.

## Watershapes

More often than not, uniquely shaped pools cannot be fitted for a plastic pool blanket, or, if they can, the cost is prohibitively high and difficult to apply.



Moreover, beautifully constructed pools with a custom designs like lazy rivers and wave pools shouldn't be covered with an unattractive plastic blanket, even were it convenient to do so.

## Water Features



If your pool has water features, such as fountains, combination pool / spas, or waterfalls, you may find it difficult, if not impossible, to find a plastic pool cover that will work with your pool.

Hiding aesthetic features underneath a plastic cover isn't an ideal solution to your situation, in any case.

# How Heatsavr™ Can Help

With basically no maintenance and a low initial investment, Heatsavr™ is an ideal solution for just about any aquatic center, regardless of location, pool shape or size.

If your facility is home to a creative design construction the opportunities to use a traditional pool blanket as a means of conserving heat, water and energy are limited. If you choose have a custom cover fitted for your pool, the costs may be prohibitive.

Heatsavr™ can cover any shape of pool, based on square footage, without discriminating. As a liquid, it simply follows the borders of any shape you may have. Similarly, Heatsavr™ can form itself around any water feature that may disrupt the water, effectively covering your pool at all times. It will also cover your pool at all times without inhibiting the aesthetics of your facility.

Pool covers can become maintenance nightmares: rollers get in the way, may cause injuries, and definitely take up valuable deck space. Heavy covers have been known to cause back strain and keeping the plastic from deteriorating in extreme weather conditions can be difficult. Plastic covers and rollers also have to be carefully cleaned and maintained on a regular basis.

Heatsavr™, when used in conjunction with the an automatic metering system, is a hands free, set and forget solution, and the only maintenance it requires is to change the jug of product when it is empty.

Many commercial aquatics facilities actually have to increase the hours their staff put in in order to ensure the proper usage of pool covers. Large covers often take 2 or more people to apply and remove at least twice a day! Heatsavr™ does not require any staff or heavy lifting; the automatic metering system does all the work.

During the 2002 Winter Pool Season, Heat Saver was used on our 102,000 gallon beach lagoon pool. We saved a significant amount on our gas heating costs, compared to the previous year. The system was easy to install and use. Our two large water features ran from 9:00 AM to 9:00 PM, while our four pool heaters maintained an 82 degree water temperature. Nine ounces of Heat Saver was injected into the pool every night, after 9:00 PM. Heat Saver worked well. In fact, I won an award from our management company for the substantial savings in gas heating costs for our property over a four month period.

Rickey Ross  
Maintenance Supervisor,  
San Cervantes



## Santizing Agents & Equipment



Commercial aquatics facilities use a variety of sanitizing agents and equipment to maintain healthy, clean swimming environments. Some of the technologies that are common include:

### Flocculants & Heatsavr™

Flocculants, such as Sodium Aluminate, Poly Aluminum Chloride, Aluminum Sulphate, are added to swimming pool water to bulk small particles together, making it easier for filters to collect, or allowing the debris to settle on the bottom of the pool to be vacuumed out.

Flocculants will be present throughout the whole body of water; Heatsavr™ floats on the surface and does not mix with the pool water. Flocculants attract particles that are large compared to Heatsavr™, molecules, which are a miniscule .08 microns. Since flocculants fall to the bottom of the pool, there is not much opportunity for them to collect Heatsavr™ particles.

Heatsavr™ dosing accounts for flocculants to be used in the pool and the recommended daily dosage rate (1 oz / 400 square feet per day) of Heatsavr™ will allow the product to work as expected with flocculants present in the water.



### UV / Ozone & Heatsavr™

Ultraviolet Light (UV) and Ozone systems provide a secondary treatment option for reducing chloramines in swimming pools and spas. Pool water is exposed to UV rays produced by a high output ultraviolet lamp. The UV exposure kills micro-organisms, bacteria, algae, and a myriad of other harmful organisms.

Ozone generators are automated systems that inject ozone into the water during set filtration cycles. Ozone removes chloramines and is known to kill bacteria, viruses, cysts, yeast, mildew and mold.

Ozone and UV will only marginally reduce the active ingredient in Heatsavr™. Heatsavr™ can be successfully used in pools with these systems, though we recommend increasing the dosage rate to 1 mL per m<sup>2</sup> per day.



## Skimmers / Tanks & Heatsavr™

A perimeter overflow swimming pool has an overflow channel, covered by a removable grille. Surface water flows over the edge of the pool and runs by gravity to the filtration plant, usually via a catchment and top-up tank.

Surge tanks are often required on gutter pools to allow a “storage” space for water displaced by swimmers. It is also common to find D.E. filter components installed in a field constructed concrete tank, which also acts as a surge tank. The volume of water that can be stored in the space between the normal water level in the surge tank and the pool water level is the surge capacity of the tank.

When using Heatsavr™ with a circumference skimmer and/or surge tank we recommend dosing the liquid pool cover multiple times throughout the day, at a combined dosage rate of 1 oz per 400 square feet of surface area. Increasing the dosage rate by 25%, and spreading the dosing throughout the day (0.25 oz per 400 square feet four times a day) ensures that Heatsavr’s surface coverage will be more consistent, protecting your pool from evaporation, heat and energy loss.



### Filters & Heatsavr™

Membrane filtration for swimming pool water treatment are gaining popularity in parts of Europe. Different types of membrane filters are used, such as Reverse Osmoses, Ultra filtration or Micro filtration, depending on the size of particles that need to be removed. Sand filters can remove particles down to 10 microns, Ultra filtration down to 0.01 micron.

Heatsavr™ has a molecular size of .08 microns, so it can be used in sand, diatomaceous earth, glass, and cartridge filters without issue. Other filter technologies will depend on their ability to filter out small particles; if they don’t filter down to less than .08 microns in size, than Heatsavr™ is compatible for use.



## Heatsavr™ Integration

Heatsavr™ can be used effectively in conjunction with the sanitizing agents & equipment used in commercial aquatics facilities.

Heatsavr™ can be used with flocculants, UV, ozone, circumference skimmers and balance tanks and most filtration media successfully when using the recommended dosage rate, in some cases that dosage rate must be increased by 25%. If a pool is using more than one of these technologies, it is not necessary to increase the dosage rate more than once.

Heatsavr’s normal daily dosage rate was developed for commercial pools, established with the expectation that some of the product will be splashed out of the pool, taken out of the pool through backwashing, removed through normal biodegradation, or reduced via other channels (such as the ones mentioned above). A 25% increase in dosage rate allows for a buffer of ensured effectiveness, without promoting excessive dosing that will cost you in your daily operations.

Note: Pools that use chlorine, bromine and salt water chlorinated pools, do not need to adjust their Heatsavr™ dosage. Heatsavr™ is pH neutral and will have no effect on their pool chemistry.

# Learn more about Liquid Pool Covers

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