WATERFEATURE START-UP PROCEDURE

The pool finish will start to hydrate and cure immediately after mixing, with the majority of hydration taking place within the first 28 days. This critical time period is when a finish is most susceptible to staining, scaling and discoloration. Proper start-up procedures including timely brushing and constant monitoring and adjusting of the pool water is mandatory. The following recommended start-up method is based on procedures shown to produce the best aesthetic results. Brushing and monitored chemical adjustments will be mandatory by the homeowner or a trained pool technician during the service life of ***any pool surface.*** **NEVER MIX CHEMICALS–ALWAYS ADD CHEMICALS TO WATER, NEVER WATER TO CHEMICALS.**

POOL FILL DAY

Step 1. Make sure the filtration equipment is operational.
Step 2. Remove all floor return heads and directional eyeballs to prevent streaking.
Step 3. Based on temperature and type of finish, fill the pool to the middle of the skimmer or specified water level without interruption as rapidly as possible with clean potable water to help prevent a bowl ring. Place a clean rag on the end of the hose placed at the deepest area of the pool to prevent plaster damage. If a water truck is required, 24 inches (60 cm) of water should be placed at the deepest area for a water cushion.
Step 4. At no time should any person be allowed in the pool during the fill.
Step 5. Dark finishes, slow fills, hot or windy conditions may require misting the pool finish after 400 minutes during the fill process to minimize cracking.
Step 6. Test the fill water for pH, total alkalinity, calcium hardness, and metals. Record test results.
Step 7. Start the filtration system ***immediately*** when the pool is full to the middle of the skimmer or specified water level.

1ST DAY

Step 1. Test the ***pool*** water for pH, total alkalinity, calcium hardness, and metals. Record test results.
*Step 2. High total alkalinity should be lowered to 80 ppm (mg/l) using pre-diluted Muriatic Acid (31-33% Hydrochloric acid). Always pre-dilute the acid by adding it to a 5 gallon (19 L) bucket of pool water[2].
Step 3. High pH should be reduced to 7.2 ***if the alkalinity is already 80-100 ppm (mg/l)*** using pre-diluted Muriatic Acid (31-33% hydrochloric)***.***
*Step 4. Add a pre-diluted quality, testable sequestering agent to achieve 15-20 ppm (mg/l). Follow manufacturer's start-up recommendations.
Step 5. Brush the entire pool surface ***thoroughly at least twice daily*** to homogenize chemicals and remove plaster dust.
Step 6. Operate filtration system continuously a minimum of 72 hours.
Step 7. DO NOT add chlorine for 48 hours. This can unintentionally create fallout and cause metal precipitation which may stain or discolor the surface.

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2nd DAY

Step 1. Repeat 1st Day steps
Step 2. Operate filtration system continuously a minimum of 48 hours.
Step 2. Brush the pool surface ***thoroughly at least twice daily*** to homogenize added chemicals and remove plaster dust.

3rd DAY

Step 1. Repeat **1st DAY** steps 1 thru 6.
Step 2. Start to increase the total alkalinity slowly over the next 4 days to 80 ppm (mg/l).
Step 3. Pre-diluted chlorine may now be added to achieve 1.5 to 3 ppm (mg/l)[1]. NO SALT SHOULD BE ADDED FOR 14 DAYS.
Step 4. Brush the pool surface ***thoroughly at least twice daily*** to homogenize added chemicals and remove plaster dust.

4th THROUGH THE 28TH DAY

Step 1. Repeat **1st DAY** steps 1 THRU 5 every 2 days for 28 days to help prevent scaling and staining of the pool surface..
Step 2. After 4th Day - calcium levels should be adjusted slowly not to exceed 200 ppm (mg/l)[1] during the next 28 days.
Step 3. After 4th Day - adjust cyanuric acid levels to 30-50ppm (mg/l) based on primary sanitizer of the pool (pre-dissolve through skimmer).
Step 4. On the 7th day any remaining plaster dust may be removed by vacuuming with a brush pool vacuum.

Purchase *Taking Care of Your Pool* DVD from your CLI/Aquavations representative.

DAILY WATER CHEMISTRY BALANCE AND MAINTENANCE

Balanced water chemistry is as critical during the off season months as it is in season. Water will become just as aggressive because of rain, snow, and fill water as with the regular use of chemicals. Adjust your pH, alkalinity weekly; monitor and adjust calcium hardness and cyanuric acid monthly.

DAILY WATER CHEMISTRY AFTER 28th DAYS

Maintain the water chemistry using the **Langelier Saturation Index (LSI) maintained between 0.0 and +0.3.**

Free Chlorine	1 to 3 ppm (mg/l)[1]	pH	7.2 – 7.6	Calcium hardness	200 – 350 ppm (mg/l)
Total Chlorine	0.0 ppm (mg/l)	Alkalinity	80 – 120 ppm (mg/l)	Cyanuric acid	30 – 50 ppm (mg/l)
Testable Sequestering Agent 10-12 PPM or as per manufacturer's instructions				TDS 300-1800 ppm (mg/l) (non-salt pools)	

Salt level 2500 – 3500 ppm (mg/l) (Saltwater chlorination only)

The **Langelier Saturation Index (LSI)** must be maintained between **0.0 and +0.3** for day-to-day maintenance after the initial start-up procedure had been completed. The preferred LSI should be 0.0 to + 0.3. This will help reduce the potential of variations of the pool surface. Disregarding these **(LSI)** parameters promotes degradation/discoloration on the negative (-) side and scaling/discoloration on the positive (+) side.

LANGELIER SATURATION INDEX (LSI) =
pH + Total Alkalinity Factor + Calcium Hardness Factor + Temperature Factor – 12.1
TDS up to 1000 ppm (mg/l) – 12.1, TDS 1000 - 2000 ppm (mg/l) – 12.2 ,TDS 3000+ ppm (mg/l) – 12.3

Deterioration, discoloration and scaling as a result of the premature or improper use of chemicals and/or chemical feeders are the responsibility of the equipment installer and operator. Feeders other than ORP and pH controllers should not be placed in operational for a minimum of 28 days.

Failure to follow the manufacturer and/or applicator instructions and control the LSI may cause detrimental effects, which is not the result of improper workmanship or a manufacturer's defect.

LSI CALCULATOR

TA ppm (mg/l)	CH ppm (mg/l)	Temp F° (C°)
FACTOR	FACTOR	FACTOR
5=0.7	50=1.3	32(0C)=0.0
25=1.4	75=1.5	37(3C)=0.1
50=1.7	100=1.6	46(8C)=0.2
75=1.9	125=1.7	53(12C)=0.3
100=2.0	150=1.9	60(16C)=0.4
125=2.1	200=2.0	66(19C)=0.5
150=2.2	250=2.0	76(24C)=0.6
200=2.3	300=2.1	84(29C)=0.7
300=2.5	400=2.2	94(34C)=0.8
400=2.6	800=2.5	105(41C)=0.9

A calculated Saturation Index (LSI) of 0.0 is considered balanced.
A calculated (-) negative Saturation Index (LSI) has corrosive tendencies.
A calculated (+) positive Saturation Index (LSI) has scaling tendencies.

EXAMPLE:
POOL WATER CHEMISTRY
pH 7.8
TA 125 mg/l
CH 300 mg/l
TF 90° F

CALCULATED LSI

pH	**7.8**
TA factor	**2.1**
CA factor	**2.1**
Temp factor	**.8**
Total	**+12.8**
Subtract constant	**-12.1**
LSI =	**+0.7 SCALING**

Target preferred 0.0 to +0.3

Use the closest LSI factor to the chemistry reading.

Caution: Research has shown cyanuric acid levels 100 ppm (mg/l) and above may cause detrimental effects to the pool surface. Excessively high calcium hardness and cyanuric acid levels should be diluted. **DILUTION IS THE LOW COST SOLUTION.**

These procedures are considered to be sound technical industry practices.

[1]mg/l (milligram per liter) = 1 PPM (part per million) [2]**ALWAYS ADD ACID TO WATER NEVER WATER TO ACID**

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