

# TECHNICAL BULLETIN

## BULLETIN 14

### ALUMINUM HYDROXIDE

<b>SYMPTOMS</b>	“Crackling”, “gurgling”, or “popping” noises from new water heaters (installed less than six months).
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<b>CAUSE</b>	In a few isolated parts of the United States where the water supply has a relatively high pH (8+), water conditions will react with the aluminum anode to form excessive amounts of aluminum hydroxide on the anode and in the bottom of the tank. Aluminum hydroxide looks like “jelly beads” or a green, blue or gray gel like substance in the heater drain or at faucet aerators.
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<b>THE FIX</b>	This procedure should only be performed by someone with abilities equal to a licensed tradesman. Aluminum hydroxide can be removed by using one of the methods outlined.
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	<b>If tank is new <u>with no</u> lime build-up to any degree:</b>
1	Turn off the heater.
2	Remove the anode.
3	Flush the tank thoroughly with water.
4	Replace the aluminum anode ( <i>identifiable by smooth surface on plug</i> ) with magnesium anode ( <i>identifiable by weld bead on plug</i> ).
	<b>If the tank is new <u>with</u> lime build-up to any degree:</b>
1	Turn off the heater.
2	Drain the heater.
3	Remove the anode.
4	Add UN-LIME to the tank. 20-40 gallon models (use 3 gallons of UN-LIME) 41-65 gallon models (use 5 gallons of UN-LIME) 66-100 gallon models (use 7 gallons of UN-LIME) <i>(On electric models, be certain the lower element is immersed in solution.)</i>
5	Heat the UN-LIME to a temperature between 140°F to 160°F. <ul style="list-style-type: none"> <li>• GAS - Heat for 7 to 10 minutes.</li> <li>• ELECTRIC - Power off and remove the yellow wire from terminal 2 on the upper thermostat. Move the red wire from terminal 4 of the upper thermostat to terminal 2 of the upper thermostat. This allows operation of the lower element only. Restore power to the heater. Be certain that only the lower element is operating. Heat for 7 to 10 minutes.</li> </ul>
6	Shut off the water heater.
7	Allow the heated UN-LIME to stand for up to 12 minutes.
8	Drain and flush the tank. Caution: UN-LIME will still be hot.
9	Replace the original aluminum anode with a magnesium anode.
10	Fill the system with water.
11	On electric models, return the wiring to its original configuration.
12	Turn heater fuel “ON”.

<b>NOTE</b>	Since aluminum hydroxide is a product of a chemical reaction dependent on the water condition, any treatment is not considered warranty related.
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