

- b. Permanent hardness or sulphate of lime.
 - 2. Alkali salts.
 - a. Sodium sulphate.
 - b. Sodium chloride.
 - c. Sodium carbonate.
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INCRUSTING SALTS.

The incrusting salts, or total hardness consist of the carbonates and sulphates of lime and magnesia, and may be divided into temporary hardness and permanent hardness. Temporary hardness represents the carbonates of lime and magnesia. These salts, when the water is boiled at atmospheric pressure, are precipitated in the form of a soft scale or as a mud, which, if allowed to accumulate, results in a dirty boiler and a tendency to foam. Permanent hardness is sulphate of lime.

When the water is boiled at pressures below sixty pounds this remains in solution, and for this reason has been called "permanent" hardness. At pressures above this it separates as a hard scale on the flues, the result of which is continual trouble from leaky flues, due to overheating of the metal.

ALKALI SALTS.

The difference between the total dissolved solids and the total hardness would represent the "alkali" salts or the sulphates, chlorides and carbonates of sodium. These salts remain in solution after the water has been boiled, their total amount increasing