

tion for forty minutes, with stirring, to strip the calcium ions. Then the tubing was soaked for one hour in an aqueous 2.5% BaCl<sub>2</sub>·2H<sub>2</sub>O solution with constant mixing. The tubes were then placed into deionized water for thirty minutes. The water was poured out and was replaced with fresh deionized water. Thirty minutes later the water was changed again. Thirty minutes later, the water was replaced with 3000 grams of an aqueous 0.15% sodium sulfate solution in water. After ten minutes in the Na<sub>2</sub>SO<sub>4</sub> solution, the solution was poured out and was replaced with fresh DI water. The DI water was refreshed after thirty minutes and then again thirty minutes later. The barium alginate tubing was stored in deionized water.

In examples 3 and 4, the tubings prepared in examples 1 and 2 were impregnated with an antiseptic agent (AgCl).

#### EXAMPLE 3

Calcium alginate hydrogel tubing prepared as in example 1 above was soaked in an aqueous 1% silver acetate solution for one hour and then was soaked in an aqueous 30% CaCl<sub>2</sub>·2H<sub>2</sub>O for one hour. A second sample of calcium alginate tubing (control) was soaked only in the aqueous 30% CaCl<sub>2</sub>·2H<sub>2</sub>O. The samples were dried under vacuum at 60° C. The solids were then analyzed by spectroscopy for Ca and Ag. The % solids is reported below.

	Solids	Spectroscopy
Ag Treated	31.8 ± .5%	6.43% Ca 18.7% Ag
Control	23.9 ± .3%	8.43% Ca

#### EXAMPLE 4

Barium alginate hydrogel tubing prepared as in example 2 above was soaked in an aqueous 1% silver acetate solution for one hour followed by a one hour soak in an aqueous 2.5% BaCl<sub>2</sub>·2H<sub>2</sub>O solution. A second sample (control) of barium alginate tubing was soaked for one hour only in the aqueous 2.5% BaCl<sub>2</sub>·2H<sub>2</sub>O solution. The samples were dried under vacuum at 60° C. to determine the solids level. The solids were then analyzed by spectroscopy for Ba and Ag.

	Solids	Spectroscopy
Ag Treated	27.0 ± .4%	20.3% Ba
Control	22.0 ± .2%	24.3% Ba

The material prepared according to Example 4 possesses both some radiopaque properties due to the exchange of calcium with barium as in Example 2, and antiseptic properties due to the in-situ formation of AgCl.

In examples 5 and 6, the tubings prepared in examples 1 and 2 were impregnated with a radiopaque agent (BaSO<sub>4</sub>).

#### EXAMPLE 5

Calcium alginate tubing prepared as in example 1 above was soaked in an aqueous 15% Na<sub>2</sub>SO<sub>4</sub> solution for five minutes followed by an overnight soak in an aqueous 2.5% BaCl<sub>2</sub>·2H<sub>2</sub>O solution. A control sample was run by soaking the calcium alginate tubing only in 2.5% BaCl<sub>2</sub>·2H<sub>2</sub>O overnight. The samples were dried under vacuum at 60° C. to determine the solids level. The solids were then analyzed by spectroscopy for Ba and Ca.

	Solids	Spectroscopy
Na <sub>2</sub> SO <sub>4</sub> Treated	21.6 ± .1%	28.6% Ba 0.1% Ca
Control	22.1 ± .4%	24.7% Ba 0.15% Ca

The sodium sulfate treated sample was swollen during the sulfate treatment leading to a higher water content and lower solids level than the control. The barium level is higher as a result of precipitated barium sulfate in the hydrogel.

#### EXAMPLE 6

Barium alginate hydrogel tubing prepared as in example 2 above was soaked in an aqueous 5% Na<sub>2</sub>SO<sub>4</sub> solution for five minutes followed by an overnight soak in an aqueous 2.5% BaCl<sub>2</sub>·2H<sub>2</sub>O solution. A second sample (control) was soaked only in aqueous 2.5% BaCl<sub>2</sub>·2H<sub>2</sub>O solution for one hour. The samples were dried under vacuum to determine the solids level. The solids were then analyzed by spectroscopy for Ba and Ca.

	Solids	Spectroscopy
Na <sub>2</sub> SO <sub>4</sub> Treated	25.3 ± .4%	33.8% BA <0.1% Ca
Control	22.0 ± .2%	24.3% Ba

Once again, the higher barium level in the test sample reflects precipitated barium sulfate present in the hydrogel.

As can be seen from the above experiments, this invention facilitates mass production of articles with a base formulation which may then later be specialized with the introduction of function-specific additives. The invention is particularly valuable in the medical device field where medically active agents are often degraded by device process conditions such as high temperature and pressure typically used to extrude tubing for stent and catheter manufacture.

What is claimed is:

1. A process for impregnating a medical device comprising a water absorbable polymer material with a medical compound having water solubility less than about 0.5 g/liter comprising:

a) contacting at least a portion of said device with a first aqueous solution containing a first water soluble ionizable compound dissolved therein such that the contacted portion of said device is infiltrated by said first aqueous solution;

b) contacting said portion of said device with a second aqueous solution containing a second water soluble ionizable compound dissolved therein such that the contacted portion of said device is also infiltrated by said second aqueous solution;

said water soluble compounds characterized by the fact that the ions thereof react after contact to form said medical compound having water solubility less than about 0.5 g/liter within said device, said water absorbable polymer material comprising ionically or covalently crosslinked hydrogel; and said medical compound being selected from the group consisting of radiopaque compounds present in said device at a level of from about 5 to about 15 wt % and antiseptic agents present in said device at a level of from about 0.01 to about 5 wt %.

2. The process of claim 1 wherein said water soluble, ionizable compounds are selected from the group consisting of organic or inorganic salts.