Abstract: Potable water fortified with minerals and a method of fortifying potable water with minerals are disclosed.
FIELD OF THE INVENTION

This invention relates to fortified potable water and a method of making fortified potable water.

BACKGROUND OF THE INVENTION

Water plays an important role in the functioning of eco-system. There is 65% water on earth as well as in every living being. The water level in the body directly affects the health of any living being. The minimum intake of water of an individual / human being should be at least four liters a day.

One cannot separate water, human life and human health from each other. Health of human beings is directly linked to the quality of the drinking water they use. Water impurity is the main causative factor / medium through which many diseases spread in developing countries including India. Many diseases occurring in human beings are caused by those organisms which are harmful to the human beings and are present in the drinking water. The problem of scarcity of drinking water is a matter of prime concern from the view point of the health of a country like India.

At the same time, our body needs minerals on a day to day basis for its proper functioning. Minerals cannot be made in the body and must be supplemented through our diet. Many physiological processes and activities of the organs in our body largely depend on specific minerals. The daily requirement of minerals by the body is usually met through a well balanced diet. However, many Indians do not take a balanced diet because of a variety of reasons which include poverty and changing lifestyles.

Biological role of various minerals :

Magnesium is an alkaline earth metal and is the 11th most abundant element by mass in the human body; its ions are essential to all living cells. Magnesium ions are essential to the basic nucleic acid chemistry of life and thus are essential to all cells of all known living organisms. Many enzymes require the presence of magnesium ions
for their catalytic action, especially enzymes utilizing ATP, or those which use other nucleotides to synthesize DNA and RNA.

**Sulfur** in its native form, is a yellow crystalline solid. It is an essential element for life and is found in two amino acids, cysteine and methionine. In traditional medical skin treatment which predates modern era of scientific medicine, elemental sulfur has been used mainly as part of creams to alleviate various conditions such as psoriasis, eczema and acne.

**Gold** Chemically, gold is a transition metal and can form univalent and trivalent cations upon solvation. Gold compounds accumulate slowly in the body and reduce inflammation, especially related to rheumatoid arthritis, inflammatory bowel disease, psoriatic arthritis, membranous nephritis, lupus erythematosus and infrequently, juvenile rheumatoid arthritis.

**Manganese** is an essential mineral found in trace amounts in the tissues of the body. Adults normally contain an average of 10 to 20mg of manganese in their bodies, most of which is contained in the bone, the liver and the kidneys. Manganese is essential to several critical enzymes necessary for energy production, bone and blood formation, nerve function and protein metabolism. It is involved in the metabolism of fats and glucose, the production of cholesterol and it allows the body to use thiamine and Vitamin E. It is also involved in the building and degradation of proteins and nucleic acid. Manganese can help lower high triglyceride and cholesterol levels. People with diabetes often have low manganese levels and this deficiency contributes to an inability to process sugars. The supplementation of this mineral improves glucose management in diabetics.

**Silver** is a soft, white and lustrous transition metal. Hippocrates, the father of modern medicine, wrote that silver had beneficial healing and anti-disease properties. Silver compounds were used to prevent infection in World War I before the advent of antibiotics. The anti-microbial properties of silver stem from the chemical properties of its ionized form, Ag⁺.
Copper is a component of several important enzymes in the body and is essential for good health. Copper is found in all body tissues. Copper deficiency leads to a variety of abnormalities, including anemia, skeletal defects, degeneration of the nervous system, reproductive failure, pronounced cardiovascular lesions, elevated blood cholesterol and impaired immunity. Copper is involved in iron incorporation into hemoglobin. It is also involved with vitamin C in the formation of collagen and proper functioning in central nervous system. More than a dozen enzymes have been found to contain copper. The best studied are superoxide dismutase (SOD), cytochrome C oxidase, catalase, dopamine hydroxylase, uricase, tryptophan dioxygenase, lecithinase and other monoamine and diamine oxidases. The reduced red blood cell function and shortened red cell life span found with copper deficiency can influence energy levels and cause weakness and labored respiration from decreased oxygen delivery.

Zinc is an essential trace element, necessary for sustaining all life. It is a key factor in prostate gland function and reproductive organ growth. It is estimated that 3,000 of the hundreds of thousands of proteins in the human body contain zinc prosthetic groups. Zinc ions are now considered to be neurotransmitters. Cells in the salivary gland, prostate, immune system and intestine use zinc signalling. There are over 70 metalloenzymes known to require zinc for their functions. The main biochemicals in which zinc has been found to be necessary include: enzymes and enzymatic function, protein synthesis and carbohydrate metabolism. Zinc is involved in the health of the immune system; it assists vitamin A utilization and is involved in the formation of bones and teeth.

Bismuth is a heavy, brittle, white crystalline trivalent poor metal. Bismuth compounds are used in cosmetics, medicines and in medical procedures. Bismuth oxychloride is sometimes used in cosmetics. Bismuth subnitrate and bismuth subcarbonate are used in medicine. Bismuth subsalicylate is used as an antidiarrheal and to treat some other gastro-intestinal diseases.
Iron is essential to nearly all known organisms. In cells, iron is generally stored in the centre of metalloproteins, because "free" iron which binds non-specifically to many cellular components can catalyse production of toxic free radicals. Iron deficiency can lead to iron deficiency anemia. In animals, plants, and fungi, iron is often incorporated into the heme complex. Heme is an essential component of cytochrome proteins, which mediate redox reactions, and of oxygen carrier proteins such as hemoglobin, myoglobin, and leghemoglobin. Non-heme iron proteins include the enzymes methane monooxygenase (oxidizes methane to methanol), ribonucleotide reductase (reduces ribose to deoxyribose; DNA biosynthesis), hemerythrins (oxygen transport and fixation in marine invertebrates) and purple acid phosphatase.

Cobalt is a central component of the vitamin cobalamin, or vitamin B₁₂. Cobalt in small amounts is essential to many living organisms, including humans. Having 0.13 to 0.30 mg/kg of cobalt in soils markedly improves the health of grazing animals. Although cobalt proteins are less common than proteins containing first row metals like manganese, iron, or zinc, several proteins are known. Most of the cobalt proteins use a cofactor based on the corrin cobalt, derived from vitamin B₁₂, but there are also a few proteins know in which cobalt is directly coordinated by the protein structure, Methionine aminopeptidase 2 and Nitrile hydratase are two examples of these proteins.

Molybdenum is an essential trace element. It helps regulate iron stores in the body and is a key component of at least three enzymes: xanthine oxidase, aldehyde oxidase and sulfite oxidase. These enzymes are involved with carbohydrate metabolism, fat oxidation and urine metabolism. An average adult has about 9mg of molybdenum concentrated mostly in the liver, kidney, adrenal glands, bones and skin. Molybdenum deficiencies are associated with esophageal cancer, sexual impotency and tooth decay.

Due to change in the levels of even one mineral, the functioning of body organs gets affected. It is very difficult to decide optimum levels of minerals which are applicable
to everybody since large differences exist amongst different populations because of the genetic differences.

Many mineral deficiencies can be overcome by taking supplements. Other methods of addressing these deficiencies include the intake of foods that naturally contain these minerals or fortifying food and beverage products. Many formulation containing minerals are available, however there are well recognized problems associated with them such as objectionable taste, distortion of taste and mouth irritation. Moreover, it is very difficult to formulate products containing more than one mineral.

**EXISTING KNOWLEDGE**

US 7090878 discloses water composition fortified with minerals such as calcium, iron, zinc, copper, manganese, iodine, magnesium and mixture thereof. The minerals are added in deoxygenated water at desired nutrient level.

Indian Patent application 859/MUM/2005 discloses a process for fortification of water low in minerals to obtain healthy drinking water which comprises the steps of mixing calcium carbonate and magnesium carbonate with the water; adding and reacting the same with dilute solution of mixture of ferric chloride, aluminum chloride, and aluminum sulphate; absorbing oxygen from air and reacting the same with reaction mixture; allowing the insoluble matter to settle and decanting the clear water.

Manufactured mineral water composition comprising biologically acceptable soluble salts of calcium, phosphorus, potassium, silicon, sodium, chlorine, boron, chromium, cobalt, copper, iodine, lithium, manganese, molybdenum, nickel, selenium, tin at, vanadium, zinc and iron has been disclosed in US Patent application 20050145 114.

US Patent application 20050123651 discloses a mineral water composition which contains "Sengmin Donglisu" comprising various kinds of minerals, zinc hydrates and
magnesium hydrates, which has therapeutic effect such as enhancing human immune system, promoting blood circulation, preventing and treating of the diseases such as diabetes, stomachic disorder and cosmetic effects on human body.

US Patent application 20050191364 discloses a process and apparatus for making "enhanced water" for the treatment and/or prevention of diabetes as well as the prevention or delay in development of diabetes-related complications, conditions or diseases. The enhanced water contains trace minerals are selected from the group consisting of silica, magnesium, yttrium, vanadium and titanium.

The disclosed patent applications utilize minerals in their water soluble salt form and are incorporated in water to prepare mineral fortified water and none of the known processes makes use of metal alloy block from which mineral ions are leached in water to be fortified with minerals. Furthermore, a simple method of fortifying potable water with minerals with readily available constituents has not been reported in above mentioned patent applications.

In accordance with the present invention, there is provided an hitherto unreported potable water fortified with minerals and a method of making potable water fortified with minerals meant for the treatment of various diseases.

OBJECTS OF THE INVENTION

It is an object of this invention to provide a cheap and abundantly available source of minerals for administering to a mammal.

It is another object of the present invention to provide potable water fortified with minerals which has many therapeutic and curative properties.
It is yet another object of the present invention to provide potable water fortified with minerals which is free of microbial contamination.

It is a further object of the present invention to provide potable water fortified with minerals which is substantially free of flavor or sweetener compound.

It is a further object of the present invention to provide potable water fortified with minerals which has no metallic taste or after taste.

SUMMARY OF THE INVENTION

In accordance with this invention there is provided a method of fortifying potable water with minerals comprising the following steps:

a) melting in a crucible, copper in the range of 400mg to 650mg, cobalt in the range of 2mg to 4mg, manganese in the range of 4mg to 7mg, magnesium in the range of 8mg to 9mg, iron in the range of 330 mg to 560 mg, vanadium in the range of 1mg to 4mg, tin in the range of 2mg to 6mg, lead in the range of 2mg to 3mg, sulfur in the range of 1mg to 5mg, zinc in the range of 4mg to 6mg, nickel in the range of 1mg to 3mg, antimony in the range of 0.5mg to 2mg, molybdenum in the range of 0.5mg to 1mg, chromium in the range of 3mg to 4mg, niobium in the range of 3mg to 4mg, zirconium in the range of 3mg to 5mg, silicon in the range of 3mg to 4mg, silver in the range of 3mg to 4mg and germanium in the range of 3mg to 4mg to form an alloy block of 1000 mg;

b) cooling the alloy block and

c) suspending the cooled alloy block in water in sunlight for a period of about 24 hour to 36 hours or boiling water with the alloy block for a period of about 2 hours to about 12 hours to obtain potable water fortified with minerals.
Typically, in accordance with the present invention, the sequence of addition of minerals in the crucible is in line with their melting points, mineral with higher melting point being added first.

Typically, in accordance with the present invention, the ratio of mass of the alloy block to the volume of water is in the range about 1:1 to 1:80.

Typically, in accordance with the present invention, the alloy block optionally contains at least one additional mineral selected from a group consisting of cadmium in the range of 1 to 10 gm, aluminum in the range of 1 to 4 gm, bismuth in the range of 1 to 2 gm, Gold in the range of 0.5 to 1 gm and platinum in the range of 0.5 to 1 gm.

Typically, in accordance with the present invention, potable water fortified with minerals is used to treat a condition selected from a group consisting of metabolic disorders associated with mineral deficiency, stress induced disorders, immune system related disorders, diseases related to digestive system, nervous system, endocrine system and reproductive system.

Typically, in accordance with the present invention, the potable water fortified with minerals has conductivity in the range of about 0.00175 to about 0.00260.

Preferably, in accordance with the present invention, the potable water fortified with minerals has conductivity in the range of about 0.00230 to about 0.00240.

In accordance with another aspect of the present invention, there is also provided potable water fortified with minerals.

In accordance with the present invention there is also provided a method for treating metabolic disorders, stress induced disorders, immune system related disorders, diseases related to digestive system, nervous system, endocrine system that comprises administering to said patient potable water fortified with minerals.
Typically, the quantity of the potable water fortified with minerals that is administered is in the range of about 2 to 5000 ml per day for about 5 to about 2000 days.

DETAILED DESCRIPTION OF THE INVENTION

In accordance with this invention there is provided a method of fortifying potable water with minerals comprising the following steps:

a) melting in a crucible, copper in the range of 400mg to 650mg, cobalt in the range of 2mg to 4mg, manganese in the range of 4mg to 7mg, magnesium in the range of 8mg to 9mg, iron in the range of 330 mg to 560 mg, vanadium in the range of 1mg to 4mg, tin in the range of 2mg to 6mg, lead in the range of 2mg to 3mg, sulfur in the range of 1mg to 5mg, zinc in the range of 4mg to 6mg, nickel in the range of 1mg to 3mg, antimony in the range of 0.5mg to 2mg, molybdenum in the range of 0.5mg to 1mg, chromium in the range of 3mg to 4mg, niobium in the range of 3mg to 4mg, zirconium in the range of 3mg to 5mg, silicon in the range of 3mg to 4mg, silver in the range of 3mg to 4mg and germanium in the range of 3mg to 4mg to form an alloy block of 1000 mg;

b) cooling the alloy block and

c) suspending the cooled alloy block in water in sunlight for a period of about 24 hour to 36 hours or boiling water with the alloy block for a period of about 2 hours to about 12 hours to obtain potable water fortified with minerals.

In accordance with the present invention, the sequence of addition of minerals in the crucible is in line with their melting points, mineral with higher melting point being added first.
In accordance with the present invention, in the method step of melting, the crucible is first elevated to a temperature slightly in excess of the highest melting point of the minerals i.e.: melting point of Nickel. Nickel is added to the crucible at this temperature and the crucible is allowed to cool gradually without further heating. As the temperature of the crucible gradually decreases rest of the minerals are introduced at temperatures slightly in excess of their respective melting points.

Provided herein below is a list of metals used in preparation of the alloy, with their melting points.

Table No. 1: List of metals with their melting points

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name</th>
<th>Melting point</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nickel</td>
<td>2913 °C</td>
</tr>
<tr>
<td>2</td>
<td>Molybdenum</td>
<td>2623°C</td>
</tr>
<tr>
<td>3</td>
<td>Niobium</td>
<td>2477°C</td>
</tr>
<tr>
<td>4</td>
<td>Vanadium</td>
<td>1910 °C</td>
</tr>
<tr>
<td>5</td>
<td>Chromium</td>
<td>1907 °C</td>
</tr>
<tr>
<td>6</td>
<td>Zirconium</td>
<td>1855°C</td>
</tr>
<tr>
<td>7</td>
<td>Platinum</td>
<td>1768.3°C</td>
</tr>
<tr>
<td>8</td>
<td>Iron</td>
<td>1538 °C</td>
</tr>
<tr>
<td>9</td>
<td>Cobalt</td>
<td>1495 °C</td>
</tr>
<tr>
<td>10</td>
<td>Silicon</td>
<td>1420 °C</td>
</tr>
<tr>
<td>11</td>
<td>Manganese</td>
<td>1246 °C</td>
</tr>
<tr>
<td>12</td>
<td>Copper</td>
<td>1084.62 °C</td>
</tr>
<tr>
<td>13</td>
<td>Gold</td>
<td>1064.18°C</td>
</tr>
<tr>
<td>14</td>
<td>Silver</td>
<td>961.78°C</td>
</tr>
<tr>
<td>15</td>
<td>Germanium</td>
<td>938.25°C</td>
</tr>
<tr>
<td>16</td>
<td>Aluminum</td>
<td>660.32 °C</td>
</tr>
<tr>
<td>17</td>
<td>Magnesium</td>
<td>650 °C</td>
</tr>
<tr>
<td>18</td>
<td>Antimony</td>
<td>630.63°C</td>
</tr>
<tr>
<td>19</td>
<td>Zinc</td>
<td>419.53 °C</td>
</tr>
<tr>
<td>20</td>
<td>Lead</td>
<td>327.46°C</td>
</tr>
<tr>
<td>21</td>
<td>Cadmium</td>
<td>321.07°C</td>
</tr>
<tr>
<td>22</td>
<td>Bismuth</td>
<td>271.5°C</td>
</tr>
<tr>
<td>23</td>
<td>Tin</td>
<td>231.93°C</td>
</tr>
<tr>
<td>24</td>
<td>Sulphur</td>
<td>115.21 °C</td>
</tr>
</tbody>
</table>
In accordance with the present invention, the ratio of mass of the alloy block to the volume of water is in the range about 1:1 to 1:80.

Potable water fortified with minerals in accordance with the invention is characterized by conductivity in the range of about 0.00175 to about 0.00260.  
In accordance with one preferred embodiment of the invention the conductivity of the potable water fortified with minerals is in the range of 0.00230 to 0.00240. 
The alloy block as prepared in accordance with the present invention, optionally contains at least one additional minerals selected from a group consisting of cadmium in the range of Ho 10gm, aluminum in the range of 1 to 4 gm, bismuth in the range of 1 to 2 gm, Gold in the range of 0.5 to 1 gm and platinum in the range of 0.5 to 1 gm.

**Chemical Analysis of potable water samples:**

Water samples from different source were collected, mainly from Khadkwasala dam, municipal water and packed himalaya natural water. These water samples were tested for different chemical tests such as pH, TDS, hardness, alkality, chlorides, sulphates, nitrates, fluorides and irons. 
Further, these water samples were fortified with minerals in accordance with present invention and again tested for the same chemical tests as herein above mentioned. 
Sample A : Khadkwasala Dam water  
Sample B : Khadkwasala Dam water fortified with minerals in accordance with the present invention 
Sample C : Pune municipal water  
Sample D : Pune municipal water fortified with minerals in accordance with the present invention 
Sample E : Himalaya natural water  
Sample F : Himalaya natural water fortified with minerals in accordance with the present invention 
Results of chemical tests are shown in Table No. 2
Table No. 2 Chemical Analysis of Water samples:

<table>
<thead>
<tr>
<th>Test</th>
<th>Permissible Limit</th>
<th>Sample A</th>
<th>Sample B</th>
<th>Sample C</th>
<th>Sample D</th>
<th>Sample E</th>
<th>Sample F</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>6.5-8.5</td>
<td>8.7</td>
<td>8.68</td>
<td>7.42</td>
<td>7.42</td>
<td>7.58</td>
<td>7.59</td>
</tr>
<tr>
<td>TDS (mg/lit)</td>
<td>500-2000</td>
<td>94</td>
<td>80</td>
<td>81</td>
<td>79</td>
<td>295</td>
<td>273</td>
</tr>
<tr>
<td>Hardness (mg/lit)</td>
<td>300-600</td>
<td>33.94</td>
<td>47.15</td>
<td>37.72</td>
<td>37.72</td>
<td>134.25</td>
<td>135.79</td>
</tr>
<tr>
<td>Alkalinity (mg/lit)</td>
<td>200-600</td>
<td>55.2</td>
<td>36.8</td>
<td>36.2</td>
<td>30.8</td>
<td>211.6</td>
<td>133.4</td>
</tr>
<tr>
<td>Chlorides (mg/lit)</td>
<td>250-1000</td>
<td>5.827</td>
<td>5.827</td>
<td>10.68</td>
<td>12.62</td>
<td>1.942</td>
<td>3.88</td>
</tr>
<tr>
<td>Sulphates (mg/lit)</td>
<td>200-400</td>
<td>1.528</td>
<td>2.21</td>
<td>1.158</td>
<td>1.23</td>
<td>30.83</td>
<td>33.39</td>
</tr>
<tr>
<td>Nitrates (mg/lit)</td>
<td>45</td>
<td>0.582</td>
<td>0.526</td>
<td>0.535</td>
<td>0.510</td>
<td>1.680</td>
<td>0.957</td>
</tr>
<tr>
<td>Fluoride (mg/lit)</td>
<td>1-1.5</td>
<td>0.18</td>
<td>0.21</td>
<td>&lt;0.1</td>
<td>&lt;0.1</td>
<td>0.21</td>
<td>0.60</td>
</tr>
<tr>
<td>iron (mg/lit)</td>
<td>0.3-1</td>
<td>0.03</td>
<td>0.042</td>
<td>&lt;0.03</td>
<td>&lt;0.03</td>
<td>0.051</td>
<td>0.060</td>
</tr>
<tr>
<td>Arsenic (mg/lit)</td>
<td>0.01</td>
<td>&lt;0.02</td>
<td>&lt;0.02</td>
<td>&lt;0.02</td>
<td>&lt;0.02</td>
<td>&lt;0.02</td>
<td>&lt;0.02</td>
</tr>
</tbody>
</table>

**Microbial analysis of potable water fortified with minerals prepared in accordance with the present invention:**

Potable water fortified with minerals prepared in accordance with the present invention was tested for total Coliform and E. Coli.

The results of microbial analysis are provided herein below:
From the chemical test results and microbial analysis results as shown in the table 2 and 3, it is concluded that the potable water fortified with minerals as prepared in accordance with the present invention is completely safe for human consumption. Furthermore it complies with the standards laid down by WHO.

The potable water fortified with minerals prepared in accordance with this invention is used for treating metabolic disorders, stress induced disorders, immune system related disorders, diseases related to digestive system, nervous system, and endocrine system.

In accordance with the present invention there is also provided a method for treating metabolic disorders, stress induced disorders, immune system related disorders, diseases related to digestive system, nervous system, endocrine system that comprises administering to said patient potable water fortified with minerals.

Potable water fortified with minerals in accordance with this invention can be administered to the patients orally in quantities varying between 2 ml to 6 liters a day. The exact amount to be administers is determined by taking into account the age, sex, type and severity of the ailment as well as the climatic conditions. In a preferred embodiment, 10 to 100 ml Potable water fortified with minerals of the present
invention is administered in divided doses throughout the day either alone or along with other medications or other such edible food additives. Potable water fortified with minerals of the present invention is not contraindicated with any of the other therapeutic agents.

Depending on the type and severity of the ailment, duration of treatment with the Potable water fortified with minerals of the present invention can be as short as a single day and it can be as long as the entire lifetime of the patient. In a preferred embodiment the treatment period lies in the range of 2 to 2000 days.

Potable water fortified with minerals prepared in accordance with present invention was tested in human patients suffering from various diseases.

**ANECDOTAL STUDIES:**

A set of independent clinical trials using potable water fortified with mineral as prepared in accordance with present invention were conducted on various patients suffering with different diseases. Provided herein below are the findings of these studies.

1. A 45 year diabetic male patient presented with liver damage. Besides, the patient had medical history of convulsions. The patient was first diagnosed for blood sugar level, hemoglobin and SGOT and then he was treated with the water fortified with mineral in accordance with this invention, 50 ml per day for 10 days. After 10 days of treatment, the patient was again examined for blood sugar level, hemoglobin level and SGOT.

   The results are shown in following table:
2. An 18 year male patient presented with continuous headache for eight days. He was treated with water fortified with mineral in accordance with this invention, 50ml per day for three days. After three days of treatment, the patient was again examined. The patient reported complete relief from headache.

<table>
<thead>
<tr>
<th>Test</th>
<th>Pre-treatment</th>
<th>Post-treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood sugar level</td>
<td>330 mg/100ml</td>
<td>180 mg/100ml</td>
</tr>
<tr>
<td>Hemoglobin level</td>
<td>10.6 g/dl</td>
<td>12 g/dl</td>
</tr>
<tr>
<td>SGOT</td>
<td>216 IU/Liter</td>
<td>60 IU/Liter</td>
</tr>
</tbody>
</table>

3. A 35 year diabetic male patient presented with tingling sensation in his hands. Apart from this patient had post operative piles complications. The patient was diagnosed for blood sugar level. The patient was treated with the water fortified with mineral in accordance with this invention, 50 ml per day for forty five days. After forty five days of treatment, the patient was examined. The blood sugar of patient after the treatment was found to be 120mg/100ml. The tingling sensation of hand was also ameliorated. Furthermore, significant improvement was observed with respect to the pile related symptoms.

4. A 35 year male patient presented with hernia was given the water fortified with mineral in accordance with this invention, 50 ml per day for sixty days. After sixty days of treatment, the patient was again examined. After the treatment the pain due to hernia was reduced by 45%.

5. A 35 year female patient presented with stomachache was given the water fortified with mineral in accordance with this invention, 50 ml per day for thirty days. After thirty days of treatment, the patient was completely cured from stomachache.
6. A 17 year female patient presented with hypothyroidism. The patient was diagnosed for TSH level in the blood and then she was treated with the water fortified with mineral in accordance with this invention, 50 ml per day for 15 days. After 15 days of treatment, the patient was again examined. The results are shown in the following table.

<table>
<thead>
<tr>
<th>Test</th>
<th>Pre-treatment</th>
<th>Post-treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSH</td>
<td>34 mlU/L</td>
<td>10 mlU/L</td>
</tr>
</tbody>
</table>

7. A 42 year male patient presented pain in joints. Besides, the patient also had burning sensation after having meal. The patient was given the water fortified with mineral in accordance with this invention, 50 ml per day for 15 days. After 15 days of treatment, the pain in joints of the patient was reduced and burning sensation was completely diminished.

8. An 8 year old male patient presented with chronic allergic bronchitis with asthma. Besides, the patient had continuous cough. The patient was treated with the water fortified with mineral in accordance with this invention, 10 ml every three hours for 3 days. After 3 days of treatment, patient got relief from coughing. Furthermore, no asthma attack has been reported even two months after the treatment.

9. A 65 year old female patient presented with oesophageal squamous cell carcinomas. Apart from this patient had difficulty in swallowing. The patient was treated with homoeopathic medicine along with the water fortified with mineral in accordance with this invention 20 ml, three times a day for 60 days. After 60 days of treatment, the patient was able to swallow solids and liquids without any pain.
10. A 32 year old female patient presented with chloasma. Besides, the patient had knee pain. The patient was treated with homoeopathic medicine along with the water fortified with mineral in accordance with this invention, 50 ml twice a week for local application. After treatment, there was reduction in knee pain. Furthermore, the pigmented spots on the skin became fade.

11. A 16 year old male patient presented with flatulence colic with distended abdomen was given homoeopathic medicine along with the water fortified with mineral in accordance with this invention, 10 ml for every three hours for a week, followed by 20 ml three times a day for 15 days. After the treatment, flatulence colic was completely cured.

12. A 65 year old male patient presented with total baldness. Besides, the patient also had chronic backache. He was given the water fortified with mineral in accordance with this invention, 15 ml, 3 times and a day for three months for local application to treat baldness. Simultaneously patient was asked to apply the water fortified with mineral in accordance with this invention to the back. After 3 months treatment there was hair growth upto 60 %. Furthermore, backache was also relieved.

13. An 18 year old female patient presented with menstrual cycle disorder. She was treated with the water fortified with mineral in accordance with this invention, 20 ml three times a day for two months. After two months treatment, menstrual cycle of the patient was regularized.

While considerable emphasis has been placed herein on the specific ingredients of the formulation of the preferred embodiment, it will be appreciated that many alterations can be made and that many modifications can be made in the preferred embodiment without departing from the principles of the inventions. These and other changes in the preferred embodiments as well as other embodiments of the invention will be
apparent to those skilled in the art from the disclosure herein, whereby it is to be distinctly understood that the foregoing descriptive matter is to be interpreted merely as illustrative of the invention and not as a limitation.
Claims:

1. A method of fortifying potable water with minerals comprising the following steps:
   (a) melting in a crucible, copper in the range of 400mg to 650mg, cobalt in the range of 2mg to 4mg, manganese in the range of 4mg to 7mg, magnesium in the range of 8mg to 9mg, iron in the range of 330mg to 560mg, vanadium in the range of 1mg to 4mg, tin in the range of 2mg to 6mg, lead in the range of 2mg to 3mg, sulfur in the range of 1mg to 5mg, zinc in the range of 4mg to 6mg, nickel in the range of 1mg to 3mg, antimony in the range of 0.5mg to 2mg, molybdenum in the range of 0.5mg to 1mg, chromium in the range of 3mg to 4mg, niobium in the range of 3mg to 4mg, zirconium in the range of 3mg to 5mg, silicon in the range of 3mg to 4mg, silver in the range of 3mg to 4mg and germanium in the range of 3mg to 4mg to form an alloy block of 1000mg;
   (b) cooling the alloy block and
   (c) suspending the cooled alloy block in water in sunlight for a period of about 24 hours to 36 hours or boiling water with the alloy block for a period of about 2 hours to about 12 hours to obtain potable water fortified with minerals.

2. The method of claim 1, wherein the sequence of addition of minerals in the crucible is in line with their melting points, mineral with higher melting point being added first.

3. The method of claim 1, wherein the ratio of mass of the alloy block to the volume of water is in the range about 1:1 to 1:80.

4. The method of claim 1, wherein the alloy block optionally contains at least one additional minerals selected from a group consisting of cadmium in the range of
lto 10gm, aluminum in the range of 1 to 4 gm, bismuth in the range of 1 to 2 gm,
Gold in the range of 0.5 to 1gm and platinum in the range of 0.5 to 1 gm.

5. The method of claim 1, wherein the potable water fortified with minerals is used
to treat a condition selected from a group consisting of metabolic disorders
associated with mineral deficiency, stress induced disorders, immune system
related disorders, diseases related to digestive system, nervous system, endocrine
system, reproductive system.

6. The method of claim 1, wherein the potable water fortified with minerals have
conductivity in the range of about 0.00175 to about 0.00260.

7. The method of claim 1, wherein the potable water fortified with minerals have
conductivity in the range of about 0.00230 to about 0.00240.

8. Potable water fortified with minerals is obtained by a process as claimed in claim
1.

9. A method for treating metabolic disorders, stress induced disorders, immune
system related disorders, diseases related to digestive system, nervous system,
endocrine system that comprises administering to said patient potable water
fortified with minerals.

10. The method of claim 9, wherein the quantity of the potable water fortified with
minerals that administered is in the range of about 2 to 5000 ml per day for about
5 to about 2000 days.