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Drinking Water: Treatment Guideline[1]

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Many water quality problems can now be treated in the home with water filters, distillers, softeners, reverse osmosis units, and chemical units. Being an educated consumer will help you choose a home treatment system for your specific water quality problems and allow you to interact knowledgeably with salespeople and water treatment specialists.

If more than one water quality problem exists, choosing a treatment device can be especially confusing and complicated. Many times you cannot treat one problem without treating another first. Sometimes, two problems can be eliminated with one treatment. And, occasionally the treatment itself causes other problems.

For example, it is impractical to install a distiller to remove lead from your drinking water if your water is corrosive and continues to remove lead from the housepiping system. Similarly, a reverse osmosis unit installed to remove a pesticide contaminant will not work efficiency if the water also contains particles of insoluble minerals which can clog the membrane filter.

Depending on your source of water, you may have to correct minor problems before you can address your concern. The following guidelines for water treatment are based on the fact that it is practical and efficient to treat some water quality problems before others. For instance, only after turbidity, acidity, hardness and iron have been controlled will activated carbon filters, reverse osmosis units, or distillers operate efficiency.

Remember, these steps are a simplification of water treatment. When considering home water treatment, consult with water treatment professionals at a reputable and certified dealership to determine the best treatment approach for your particular problem.

Water Treatment Steps

1. Have water tested for contaminants.
2. Remove fine sand, silt, clay and other particles, using a mechanical filter or sedimentation.
3. Treat bacterial contamination, using chlorination or other forms of disinfection.

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4. Remove hydrogen sulfide gas and other odor-causing substances, using chlorination, an oxidizing filter, or activated carbon.

5. Remove insoluble iron and manganese particles using:

    - a mechanical filter
    - a water softener, for small amounts of dissolved iron and manganese
    - an oxidizing filter for higher amounts of dissolved iron and manganese
    - a chlorinator followed by a mechanical filter or an activated carbon filter for very high amounts of dissolved iron and manganese.

6. Treat for hardness using a water softener.

7. Neutralize acidity using a neutralizing filter.

8. Remove volatile organic chemicals, trihalomethanes, certain pesticides and radon, using an activated carbon filter.

9. Remove heavy metals, such as lead, mercury, arsenic, or cadmium, with reverse osmosis units or a distiller.

The National Sanitation Foundation (NSF) certifies treatment products sold on the market. NSF works with public health agencies to develop performance standards for treatment devices. When purchasing a treatment device, insist on a unit that is certified by NSF. All NSF certified products are listed in a searchable database on the internet at: http://WWW.NSF.org.