

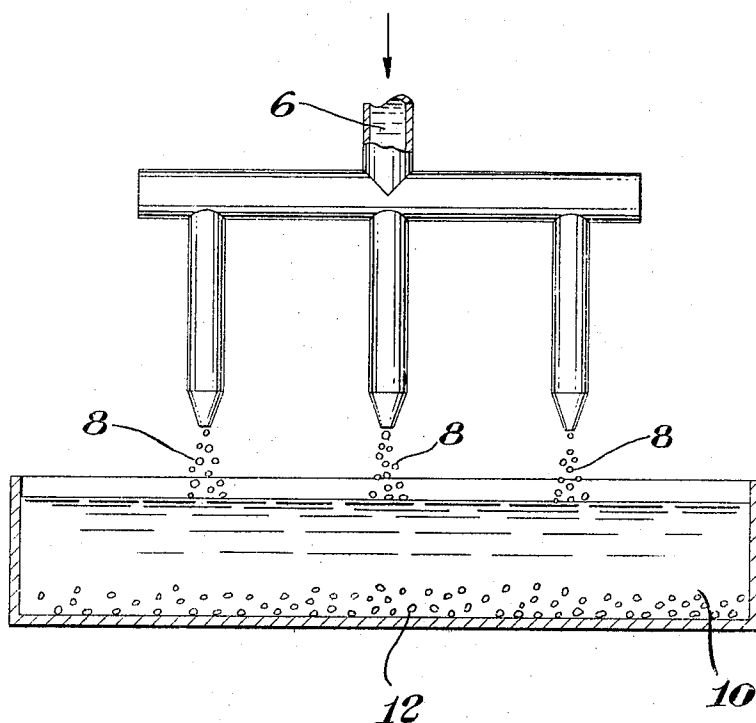
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METHOD OF PELLETING PENTACHLOROPHENOL

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1

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METHOD OF PELLETING PENTACHLOROPHENOL

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This invention relates to a method of forming substantially spherical pellets. More particularly, this invention relates to a method wherein pellets are formed by dispersing molten material into a cold liquid.

Many materials are difficult to handle when in flake, bulk, or large chunk form. It is very desirable from a handling standpoint to have material available in pellets of relatively uniform size and shape. A number of methods have been proposed for the pelleting of pentachlorophenol. Most of these methods have, however, the disadvantage of requiring elaborate and expensive equipment.

Illustrated in the accompanying drawing is one embodiment of the method of the present invention.

It has now been discovered that when molten pentachlorophenol 6, as illustrated, is introduced dropwise 8 into a water bath 10, said water bath being at a temperature of from about zero to about fifteen degrees centigrade, that substantially spherical uniformly sized pellets 12 of pentachlorophenol may be obtained.

In the process of the present invention molten pentachlorophenol maintained at a temperature close to its melting point is preferably provided, although higher temperatures may be used, if desired. Ordinarily a desirable water temperature would be in the range of from about zero to about fifteen degrees centigrade, a water temperature in the range of from about zero to about eight degrees centigrade is better, and temperatures in the range of from about zero to about four degrees centigrade are preferred.

Depth of the water used in the present invention is generally relatively shallow. As little as three inches or less depth of water may be used depending on the height from which the pentachlorophenol is dropped or dispersed into the water. The height from which pentachlorophenol is introduced to the water quench should be sufficiently high to avoid splashing of the water on the pentachlorophenol inlet, but should not be so high as to cause the pentachlorophenol to drop to the bottom of the water container prior to its solidification. Generally, a one to two inch distance from the inlet to the surface of the water is appropriate. Contact with the container bottom prior to solidification may cause distortion of the shape of the pellets.

One of the inherent advantages of the process of the present invention is the simplicity of the equipment needed, only a shallow water quench being required.

The method of the present invention may be better understood in light of the following examples which are set forth to illustrate, and are not to be construed to limit, the present invention.

Example I

Molten pentachlorophenol at a temperature of about 200 degrees centigrade was dispersed dropwise into a water quench from a point immediately above the surface of liquid water having a temperature of about zero degrees centigrade. The depth of the water was about 3 inches. Solid pentachlorophenol pellets were removed from the water quench and upon examination were noted to be substantially spherical and of substantially uniform size.

2

It has been discovered that the shape of the pellets is somewhat dependent on the rate at which molten pentachlorophenol is introduced to the water quench. Dropwise addition is desired to obtain spherical particles. Too rapid pouring of the molten liquid generally resulted in pellets of irregular shape, such as rods, twins of spheroids, and the like. Thus, the rate of addition is easily regulated to give the desired shape.

Example II

In substantially the same manner as Example I pentachlorophenol was introduced to a water quench, said water at a temperature of about 4 degrees centigrade. Substantially similar results were obtained in that spherical substantially uniformly sized pentachlorophenol pellets were recovered from the water quench.

Example III

At a water temperature of about 8 degrees centigrade and using the method of Examples I and II substantially spherical, uniformly sized pentachlorophenol pellets were obtained.

Example IV

Experiments were run in accordance with the technique disclosed in Example I using water at 20, 25 and 95 degrees centigrade, U.S.P. heavy mineral oil at 25 and 145 degrees centigrade, Dow Polyglycol P-400 at 25 and 135 degrees centigrade, Dow Polyglycol P-750 at 25 and 145 degrees centigrade, glycerine at 25 and 145 degrees centigrade, Dowanol DPM at -40, 25 and 140 degrees centigrade, Dowanol TPM at -30, 25 and 140 degrees centigrade, xylene at 25 and 145 degrees centigrade, 1,1,2,2-tetrachloroethane at 25 and 125 degrees centigrade, and 1,1,2,2-tetrachloroethane plus 0.18 percent by weight Aerosol MA¹ at 25 and 125 degrees centigrade as quenches.

Results obtained using the above as quenches were not satisfactory, the pellets having generally irregular shapes and somewhat dissimilar sizes.

Various modifications may be made in the present invention without departing from the spirit or scope thereof, and it is to be understood that I limit myself only as defined in the appended claims.

I claim:

1. A method of forming substantially spherical pellets of pentachlorophenol which comprises, introducing molten pentachlorophenol dropwise into liquid water having a temperature of from about zero to about fifteen degrees centigrade, and removing substantially spherical pentachlorophenol pellets from said liquid water.

2. A method of forming substantially spherical pellets of pentachlorophenol which comprises, introducing molten pentachlorophenol dropwise into liquid water having a temperature of from about zero to about eight degrees centigrade, and removing substantially spherical pentachlorophenol pellets from said liquid water.

3. A method of forming substantially spherical pellets of pentachlorophenol which comprises, introducing molten pentachlorophenol dropwise into liquid water having a temperature of from about zero to about four degrees centigrade, and removing substantially spherical pentachlorophenol pellets from said liquid water.

4. A method of forming substantially spherical pellets of pentachlorophenol which comprises, introducing molten pentachlorophenol dropwise into liquid water having a temperature of about zero degrees centigrade, and

¹ Aerosol MA is the sodium salt of the dihexyl ester of sulfosuccinic acid.

3

removing substantially spherical pentachlorophenol pellets from said liquid water.

5 5. A method of forming substantially spherical pellets of pentachlorophenol which comprises, introducing molten pentachlorophenol dropwise into liquid water having a temperature of about four degrees centigrade, and removing substantially spherical pentachlorophenol pellets from said liquid water.

10 6. A method of forming substantially spherical pellets of pentachlorophenol which comprises, introducing molten pentachlorophenol dropwise into liquid water having a temperature of about eight degrees centigrade, and

4

removing substantially spherical pentachlorophenol pellets from said liquid water.

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