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MECHANOCHEMICAL PREPARATION OF CRYSTAL FORMS OF SELECTED PHARMACEUTICAL SUBSTANCES

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The most common method used to control polymorphism is crystallization. An alternative to the most commonly used solvent crystallization is a mechanochemical treatment of a crystalline substance or a mixture of more than one substance. Mechanochemistry is defined as chemical synthesis induced by external mechanical energy, such as grinding two solids using a mortar-and-pestle, ball-mill, or shaker. Such reactions are classified as Green Chemistry synthesis, prioritizing high yields, mild conditions and low to no use of solvents.

To date, three polymorphic forms of 3-hydroxybenzoic acid have been described. Similarly, crystal structures of three polymorphs have been found for co-crystal formed between urea and barbituric acid.

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