



HOW DOES TOXIMED WORK?

Toximed is a synthetic water-soluble adsorbent based on polymer technology. The polymer used in Toximed can be described as a high molecular weight polymer, based on long-chain **polyethylene** structure that contains pendant **polyamide** groups. The amide group contains a nitrogen atom bonded to a carbonyl group in a cyclic structure.

The high loading of amide groups in the polymer chain ensures that there are several hundred functional groups on each polymer chain.

The oxygen and nitrogen atoms of the polyamide groups create a dipolar structure that has affinity for other polar molecules, thereby creating an adsorption bonding between the molecules. This phenomenon of adsorption is widely used in liquid chromatography, where a polymeric stationary phase is used to adsorb polar molecules from solution.

It is widely recognized that certain polyamide resins (polymers) can be used in liquid chromatography to adsorb polar molecules containing **Phenolic** and **Carboxylic** functional groups from aqueous solutions. In particular, it is known that poly-amide resins can irreversibly retain quinones.

Aflatoxins contain a quinone-type structure based on “Benzo-pyran-dione” groupings. The adsorption of these functional toxic molecules by **polyamides** is effective over a wide pH range.

In the digestive tract, multiple chains of the Toximed molecule form complex cross-linked structures, with multiple sites for bonding and adsorption of mycotoxins, especially in the gut lumen.

Vitamins and amino-acids are not bound to Toximed, since they lack the functional groups required for adsorption to **polyamide** molecules. Because of its high molecular weight (average MW = 30,000), the Toximed molecule is not absorbed across the digestive lining. Ultimately, the Toximed molecule bound to mycotoxins is excreted.

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