General Characteristics of Luctoman®

Luctoman® is a special grade of Guar Gum, specifically developed for the pharmaceutical industry. Guar Gum is a natural vegetable polymer, and it is obtained by refining and pulverising the endosperm of the Guar seed - "Cyamopsis Tetragonalobus".

The use of Guar Gum as a Pharmaceutical aid has increased significantly over the last few years. The material has been successfully used as a tablet binding and disintegrating agent; in peptic ulcer therapy; jelly formulations; bulk laxatives; appetite depressants; emulsions and suspensions; lotions and creams, and as a viscosifying and stabilising agent. Some Pharmaceutical formulators have produced pharmaceutically elegant and therapeutically efficient products, using Guar G um as an aid, while others have not taken advantage of this versatile gum's unique properties.

Luctoman® is a cold water soluble, natural vegetable galactomannan, yielding high viscosities at relatively low concentrations. There is an "exponential" relationship between concentration of **Luctoman®** in water and the viscosity. Whereas a 1% paste would yield a viscous paste, a 3%-
5% concentration would give a thick gel. These properties make **Luctoman®** unique among the various other natural gums. On a viscosity vs. price basis. **Luctoman®** is one of the most
effective cold water-soluble
polymers.

Compared to Gum Acacia and Starch, **Luctoman®** is more economical to use as a 1% paste yields about the same viscosity as 35% paste of Acacia or about 10%-20% paste of Starch.

The important characteristics of **Luctoman®** are the viscosity, particle size, hydration rate and the low microbial counts.

Luctoman® is available in various grades with varying viscosities, particle size and hydration rates to suit a variety of applications.

Applications and suggested uses of Luctoman®

As a Tablet Binding Agent

Luctoman® is often used as a binder and excipient for tablets based on powdered products. They will not stick to the moulds and losses during production with high -speed machines due to bursting of tablets can be significantly reduced.

A 1% – 1.5% paste of **Luctoman®** is recommended in products requiring weak binding. Products of this type usually require a great amount of pressure. **Luctoman®** allows the easing-up of pressure and yet does not bind the tablet so that it will not disintegrate. A high viscosity grade is recommended.

Luctoman® gives much whiter tablets, with good finish and gloss as compared to Acacia, or Starch and therefore it is very advantageous for uncoated tablets.

As a Tablet Disintegrating Agent

As a tablet-disintegrating agent, **Luctoman®** gives best results when used in a dry form in a quantity of 1% – 2%. However higher concentrations have also given excellent results for difficult disintegration. **Luctoman®** may be added at either the granulating (wet) stage or slugged in at the lubricating stage.

When added at the lubricating stage **Luctoman®** not only aids disintegration but also acts as a partial lubricant. **Luctoman®** is therefore more cost effective, as it can replace more costly materials like CMC, Alginic Acid, Sodium Lauryl Sulphate etc.

When **Luctoman®** is added at the granulating stage, the moisture content should be kept low, and the wet standing time kept at a minimum to reduce swelling and keep the material from becoming mucilaginous.

In Tablet Coatings

A 2% – 3% use of **Luctoman®** with sugar is suggested for tablet coating applications.

As a Viscosifying and Thickening Agent

A 0.1% – 0.25% use of **Luctoman®** is recommended for thickening, giving body and good flow properties to syrups and other oral liquids.

General Applications

In products such as capsules and tablets which require high concentrations of **Luctoman®** per capsule or tablet, it is recommended that an easily dispersible grade of **Luctoman®** be used in conjunction with a dispersing aid. This is most essential to ensure complete dispersion and hydration and to prevent lumping and “dry centres” – unhydrated portions surrounded by fully hydrated particles.

Materials capable of being used as suitable dispersing aids include Sucrose, Dextrose and crystalline D-Sorbitol.

Packing, Stability and Shelf-life

Luctoman® has a normal shelf-life of 12 months, under our recommended storage conditions and as long as material is unopened.

However, **Luctoman®** being a natural vegetable polysaccharide, is susceptible to biodegradation through absorption of moisture if left open in unhygienic conditions or is exposed to high humidity. Therefore, we recommended that once a unit pack (drum, bag etc.) has been opened, the entire contents should be used in a reasonably short duration.

Storage and Handling

Luctoman® must always be stored in a cool, dry place, away from heat and out of the sun. Being a natural vegetable polymer, **Luctoman®** is susceptible to biodegradation under unhygienic conditions. Therefore, we suggest that care must be taken to avoid contamination

to material.

Dispersing Techniques

Care should be taken while dispersing **Luctoman®**. It should be gradually added to water under vigorous stirring in order to prevent formation of lumps. Stirring speed can be reduced once the entire quantity has been dispersed. Gentle mixing should however be continued till **Luctoman®** has completely hydrated. Care should be taken not to incorporate air into the paste. Most grades of **Luctoman®** will yield 90% of peak viscosity within 2 hours.

Hot water and heat maybe employed to achieve faster hydration, but care must be taken not to boil the paste at elevated temperatures for long periods as thermal degradation may destroy some viscosity.