

Microcrystalline Cellulose (MCC)

Prelims: Current events of National and International Importance

Why in news?

Recently 36 workers were killed at the factory in the explosion of the Microcrystalline Cellulose (MCC) drying unit at Sigachi Industries, Hyderabad.

- **Microcrystalline Cellulose (MCC)** - It is a chemically inert, derived from purified and partially depolymerized cellulose, commonly sourced from wood pulp or cotton linters.

Chemically inert means that a substance has very low reactivity and does not readily form chemical bonds with other substances.

- The human body does not absorb it and so the skin shows no reaction.
- **Unique property** - Its ability to form strong compacts and facilitate drug release, make it an essential component in various drug products.

Key Applications

- **Pharmaceuticals** - It is widely used as a binder, filler, Disintegrant and texturiser.
- **Binder** - It helps in forming cohesive mass of powder during tablet manufacturing, holding the drug and other excipients together.
- **Disintegrant** - It aids in the breakdown of tablets in the body, allowing for faster drug release.
- It also helps to maintain drug weight
- **Filler** - It provides bulk to the tablet, especially when the drug dose is low, and ensures active ingredients function effectively.
- **Food industry** - It is used as an anti-caking agent and fat substitute.
- It also adds texture to processed foods.
- **Cosmetics** - It is used in creams, powders, and makeup for consistency and texture.
- **Safety concerns in manufacturing** - Though MCC is safe for consumers, its manufacturing involves hazardous processes.

- It requires strict safety protocols, trained personnel, and equipment maintenance.
- **Concerns** - Global scrutiny expected on manufacturing standards and adherence to safety norms.
- India's pharma industry is a major foreign exchange earner.
- **Recommended safety practices** - HAZOP (Hazard and Operability Study) must be conducted by qualified experts.
- Continuous monitoring of plant data for abnormalities.
- Operators must be trained and maintain high safety awareness.
- Strict adherence to global safety standards to avoid future tragedies.

Reference

[The Hindu | Microcrystalline Cellulose \(MCC\)](#)

