

Case Study

Fibre Suspension

Many drugs and ingredients are water insoluble and therefore difficult to deliver in an aqueous solution format for individuals who cannot or do not want to take tablets, particularly children. The formulation and manufacture of suspensions present a number of challenges, including efficient dispersion of the active ingredient, adequate dispersion / hydration or solubilisation of suspending agents without the formation of agglomerates and masking the poor taste of active ingredients.

The resultant manufacturing process can be both complex and difficult to manage.

Typical process	Disadvantage
Dispersion of active ingredient using wetting agents (surfactants)	Needs to be optimised depending on nature of active ingredient. May cause excessive foaming during manufacture
Dispersion and hydration of the suspending agent	May require a separate processing step and could take several hours depending on the nature of the suspending agent. Typically requires high speed homogenisation and heat to prevent lump formation
Viscous sweetening syrups added to increase viscosity and density	These include sucrose syrup and polyols (e.g. maltitol or sorbitol) which can cause laxative effects
Additional materials often incorporated in order to mask the taste of the active ingredient	Resulting product usually contains artificial sweeteners
Multi stage process	Produces higher cost and complexity of manufacture.

Fibre Suspension

Our proprietary fibre suspension overcomes many of the difficulties in the manufacture of suspensions. In addition it provides additional health benefits and has significantly lower levels of additives and sugar.

The fibre base efficiently disperses and suspends water insoluble ingredients using a simple mixing process without the need for additional surfactants and stabilisers

Benefits of Fibre Suspension

- One vessel mixing process
- No need for homogenisation or heating
- No surfactants or separate suspending agents required
- Prebiotic, high fibre solution
- Naturally sweet-tasting fibres help to mask the taste of bitter drugs
- Reduced sugar content

Preservative Efficacy Test Results for Ibuprofen 100mg/5ml Suspension*

Organism	Control Count cfu/ml	Surviving number of colony forming units /ml after			Complies
		7 days	14 days	28 days	
<i>Ps. aeruginosa</i>	2.4 x 10 ⁹	<10	<10	<10	Yes
<i>St.aureus</i>	1.4 x 10 ⁸	<10	<10	<10	Yes
<i>E.coli</i>	9.9 x 10 ⁸	<10	<10	<10	Yes
<i>C.albicans</i>	2.1 x 10 ⁶	<10	<10	<10	Yes
<i>A.niger</i>	1.7 x 10 ⁶	<10	<10	<10	Yes
<i>Z.rouxii</i>	1.7 x 10 ⁶	<10	<10	<10	Yes

* Suspension exposed to a range of bacteria to test whether preservative chosen prevents growth of harmful bacteria over time; all samples passed the standard test parameters