



Designing MELTSOFT: User-Centric Dosage via Hot Melt Extrusion

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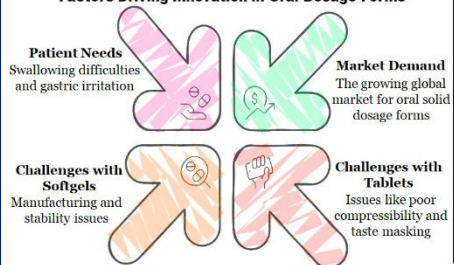
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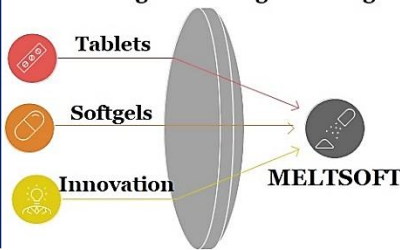


Research Background

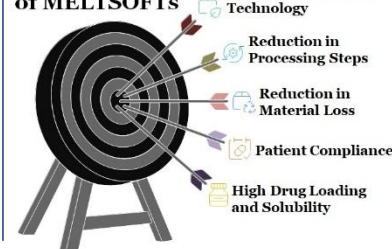
Factors Driving Innovation in Oral Dosage Forms



Addressing Oral Dosage Challenges



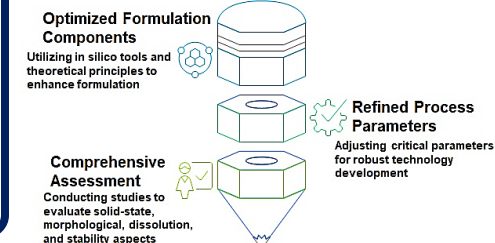
Key Features of MELTSOFTs



Objectives

- ✓ To develop MELTSOFT – a novel Soft tablet using a continuous, green hot-melt extrusion (HME) process
- ✓ To achieve **gastro-resistance in a single step**, eliminating the need for conventional enteric coating
- ✓ To compare conventional and HME-based formulations

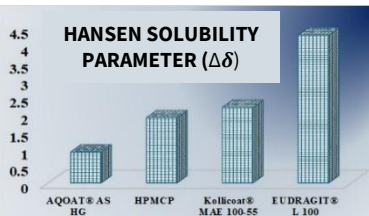
Key highlights of MELTSOFT Technology



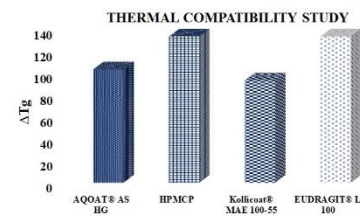
Methodology

In silico and theoretical Screening of formulation components

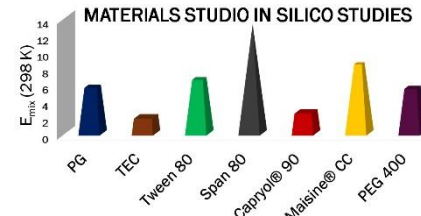
HANSEN SOLUBILITY PARAMETER ($\Delta\delta$)



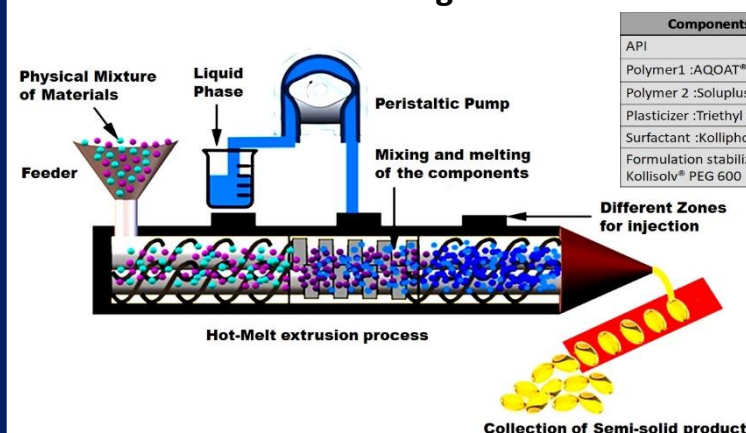
THERMAL COMPATIBILITY STUDY



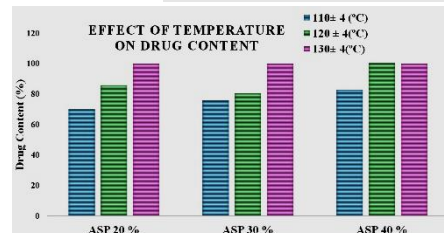
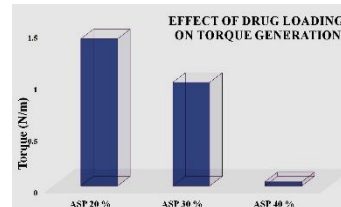
MATERIALS STUDIO IN SILICO STUDIES



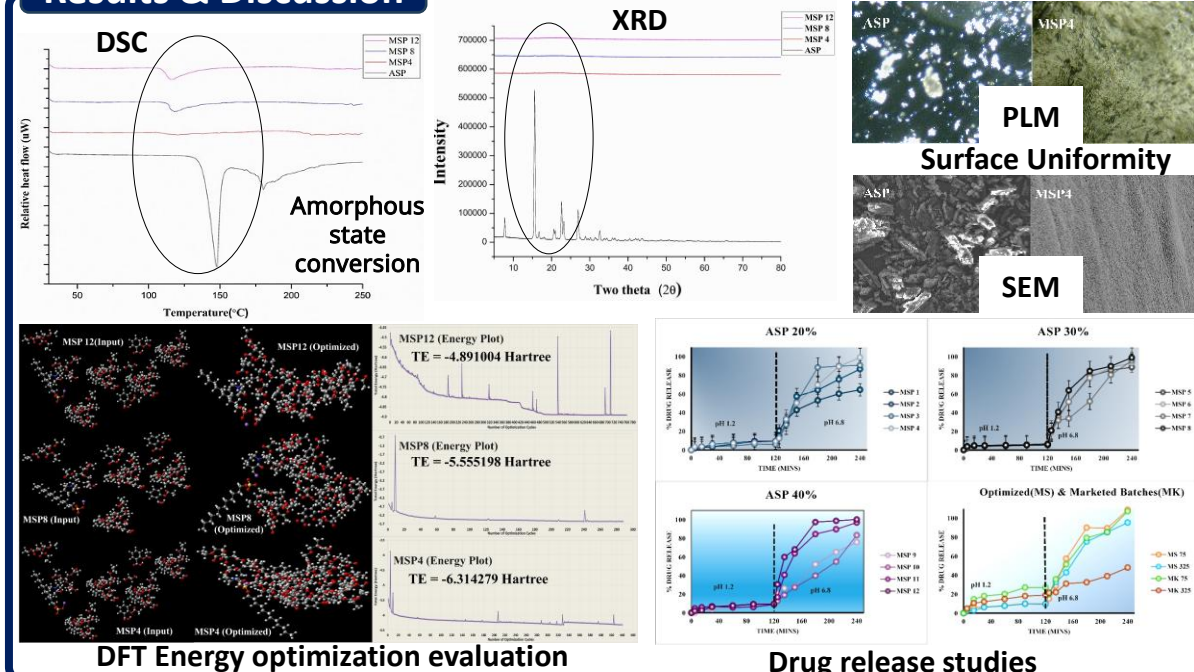
Manufacturing of MELTSOFTS & Process Optimization



Components	% (w/w)
API	20-40 %
Polymer 1 :AQOAT® AS HG	30-50 %
Polymer 2 :Soluplus®	5-10 %
Plasticizer :Triethyl citrate	3-5 %
Surfactant :Kolliphor® SLS	3-5 %
Formulation stabilizer: Kollisolv® PEG 600	5-10 %



Results & Discussion



Conclusion

Patient-centric dosage form MELTSOFT prototype was developed with minimal and higher dose range using a single-step and solvent-free approach, HME