

# Syrup and suspensions

Complete solutions for  
process plant



# The right quality – drop by drop

Syrup and suspensions are typically produced under the same high-quality conditions as applied for sterile processes. The technical and regulatory requirements to the production plants are high; the current GMP guidelines must be taken into consideration as well as the national and international applicable standards.

A consistent plant concept with reliable detail solutions is the indispensable basis for a repeatable high product quality.

If these prerequisites have been fulfilled through a high-performance process plant, a safe and reliable production is guaranteed.



## Production of syrup and suspensions

syrup	semi-sterile production
suspensions	semi-sterile or sterile production

## Production stages and characteristics

supply of liquid	flow meter or level indicator
adding of solid ingredients	vacuum or pressure process under the surface level of the liquid
stirrers	propeller stirrer or dispersing disc for higher viscosities
distribution	homogeniser or colloid mill
filtration	bag or candle filters
storage	storage vessel with stirrer
transfer	distribution panel, valve cluster



Production

As your competent partner for the manufacture of complete plant for the pharmaceutical industry GEA Diessel offers you full-service for every requirement and to meet every specification. Our experienced process engineers will collaborate with your team to develop innovative and efficient process technologies.

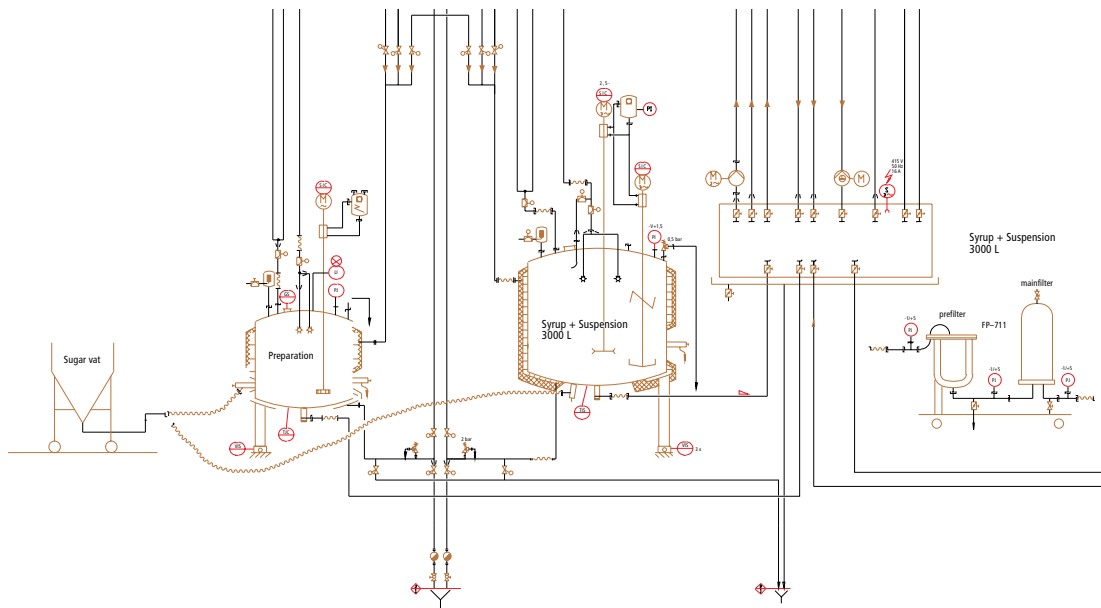
### GEA Diessel offers you:

- consultancy
- engineering
- automation
- manufacture of process vessels
- skids/units
- installation
- qualification
- assistance with validation
- after-sales service



## For better performance and quality

Whatever it is you want to produce in your process plant – syrups or drop solutions for expectorants, antibiotics or anti-asthmatics or for antiallergic, rhinological or ophthalmic preparations, in bottles, in vials or as a coating for tablets – our great diversity of plant modules will perform any task and take account of any requirements or conditions. By using the latest components and valve technology and the latest, state-of-the-art manufacturing concepts for vessels and skids, we ensure that you will be able to use your plant to manufacture your products in a manner that is both economic and kind to the materials.



## Essential characteristics are:

- design free of dead-leg areas
- complete drainability
- completely suitable for in-line CIP and SIP (cleaning/sterilisation in place)
- sample collection
- filtration using bag or candle filters
- diaphragm valve technology
- homogeniser in the circuit or starter vessel

## Automation

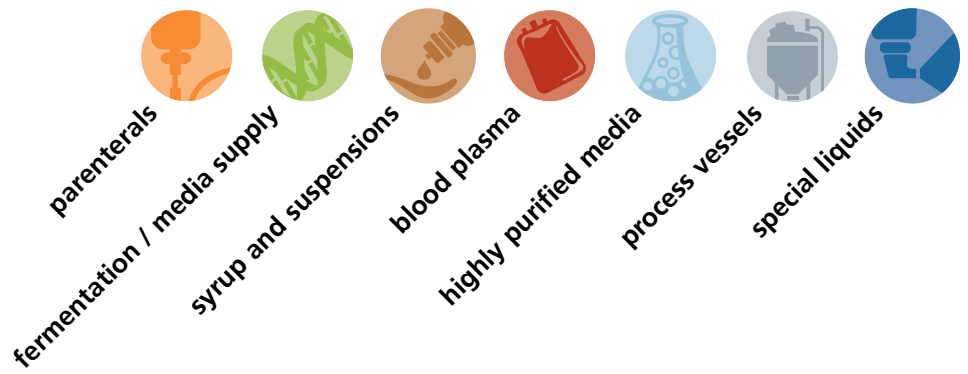
We can offer you a selection of different well-proven system solutions for the control and recording of process data. We will supply the plant with whatever type of operating system you require: starting from manual operation by buttons and switches, and passing through control systems with operator control units or process visualisation, we can go all the way to I&C and/or batch systems capable of controlling several workstations. Process and formula-relevant data can be recorded in a log.

## CIP / SIP

An essential part of a high-quality production of syrup and suspensions is an integrated CIP/SIP system. GEA Diessel provides efficient cleaning and sterilisation concepts adapted to the actual demands of the consumers and for a timely supply of the correct cleaning media to the points-of-use. From mobile and independent cleaning systems up to diverse CIP satellites fed with conditioned cleaning solutions – the range of customized solutions for your process plant is large.

## Storage





# Syrup and suspensions

## Complete solutions for process plant

*GEA Diessel specialises in planning, construction and qualification of sterile process plant for liquids in pharmaceutical and biotechnology industry. Our process systems are operational within the area of parenterals, fermentation, feed media, blood plasma and special liquids as well as clean utilities.*



*GEA Diessel has 80 years of expertise and know-how in plant and equipment technology and holds a decisive position in development of modern process technology today.*



GEA Process Engineering

**GEA Diessel GmbH**

Steven 1 31135 Hildesheim Germany  
Phone +49 5121 742-0 Fax +49 5121 742-153  
info.geadiessel.de@geagroup.com www.diessel.com