



Modified Amino Acids

Innovative chemicals for process intensification in cell culture media

Sulfo-Cysteine Sodium Salt Emprove® EXPERT

Modified amino acids are in-house manufactured amino acid derivatives with specific properties enabling the intensification of cell culture processes.

Together with the companion product Phospho-Tyrosine disodium salt, the new modified amino acid Sulfo-Cysteine sodium salt can be used as replacement for cysteine to generate highly concentrated, neutral pH feeds. Both modified amino acids eliminate the need for alkaline feeds, which are normally applied to ensure solubility and stability of the unmodified amino acids tyrosine and cysteine.

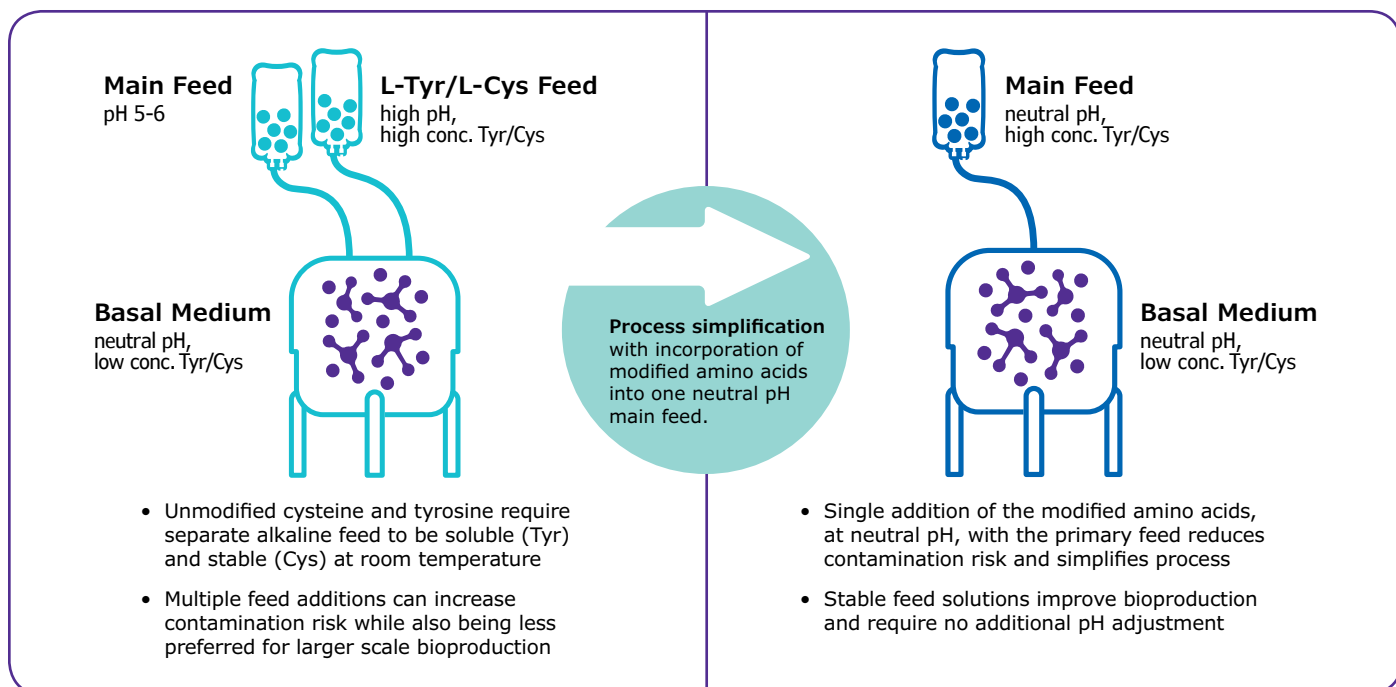
Utilization of just one single, neutral pH feed is a revolutionary idea to simplify fed-batch processes. It optimizes the application by reducing the number of necessary feeds and corresponding materials, while also reducing pH spikes. It also allows the development of formulations which are stable at room temperature.

The use of modified amino acids can furthermore have positive impacts on cell culture duration or productivity. The high feed concentration achievable using modified amino acids allows to lower the feed volume addition in biopharmaceutical manufacturing and thus may bring an increase in titer.

In addition to showing strong positive characteristics for the use in biopharmaceutical processes, there is no impact of using modified amino acids on mAb glycosylation and charge variants.

On top of that, sulfo-cysteine enables a significant reduction of fragmentation and trisulfide bonds linkages in IgG and therefore a better protein quality.

Product Information	
Chemical Name	L-Cysteine S-sulfate Sodium Salt sesquihydrate
CAS Number	150465-29-5
Molecular weight	250,23
Chemical Formula	C3H6NNaO5S2 ·1.5H2O
Physicochemical Information	
pH Value	5.0 - 8.0 (10g/L, H2O, RT)
Solubility	Up to 1.3M (H2O, RT)



Benefits

- **Reduced complexity** in fed-batch process
- **High concentrations** of modified cysteine in main feeds at neutral pH
 - > Simplify the process
 - > Optimize productivity
 - > Reduce total volume addition
- **Prevention of caustic shocks** in the bioreactor due to high pH feeds
- More convenient preparation process with **less contamination risks**
- Reduction of recombinant protein fragmentation and decrease in trisulfide bond content
- Higher feed **stability** at room temperature
- **Supply Chain Transparency** - Emprove® Expert documentation helps you meet the latest regulatory requirements
- **Vast knowledge base for application and technical support to integrate the product to your processes**

Ordering Information

Description	Cat. No.
L-Cysteine S-sulfate Sodium Salt sesquihydrate Emprove® EXPERT – 100g	1.37116.0100
L-Cysteine S-sulfate Sodium Salt sesquihydrate Emprove® EXPERT – 1kg	1.37116.1000
L-Cysteine S-sulfate Sodium Salt sesquihydrate Emprove® EXPERT – 5kg	1.37116.5000

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