

PROCESS BULLETIN

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Subject: Emulsion high pressure homogenisation:
Cloudifiers

TEST REPORT

Product description:

The product is a cloudifier based on water, vegetable oil and stabilizer. The cloudifier is a beverage emulsion and it is the most innovative solution to obtain exceptionally high cloud in the beverage industry using only natural ingredients. The product consists of fruit water extract (f.i. orange or lemon) and vegetable oil. This means that the label declaration is clean, free from any chemical additives.

Test purposes:

The target is to stabilize the emulsion reducing the average particle size below 1 μm .

Product composition: starch, oil, water, sodium benzoate and citrus acid.

Product preparation: the components have been mixed at 30°C. A good pre-mix can be prepared using a ultra high shear mixer (eg. Ultra Turrax IKA or Silverson); this is a very important step for producing a stable emulsion characterized by a closed particle size distribution (Average particle size diameter below 10 μm).

Afterwards the pre-emulsion has been homogenised at 500 bar and at 800 bar at room temperature using the second stage (50 bar) for multiple passes (one, two or three passages).

Homogenisation conditions:

Homogeniser: PANDA2K NS1001L; capacity 10l/h max pressure 1500 bar.

Homogenising valve: type PS

Homogenisation conditions: the inlet temperature was 26°C; product has been homogenized at 500/50 bar x1, 500/50 bar x2 passes and at 800/50 bar, 800/50 bar x2, 800/50 bar x3 passes.