

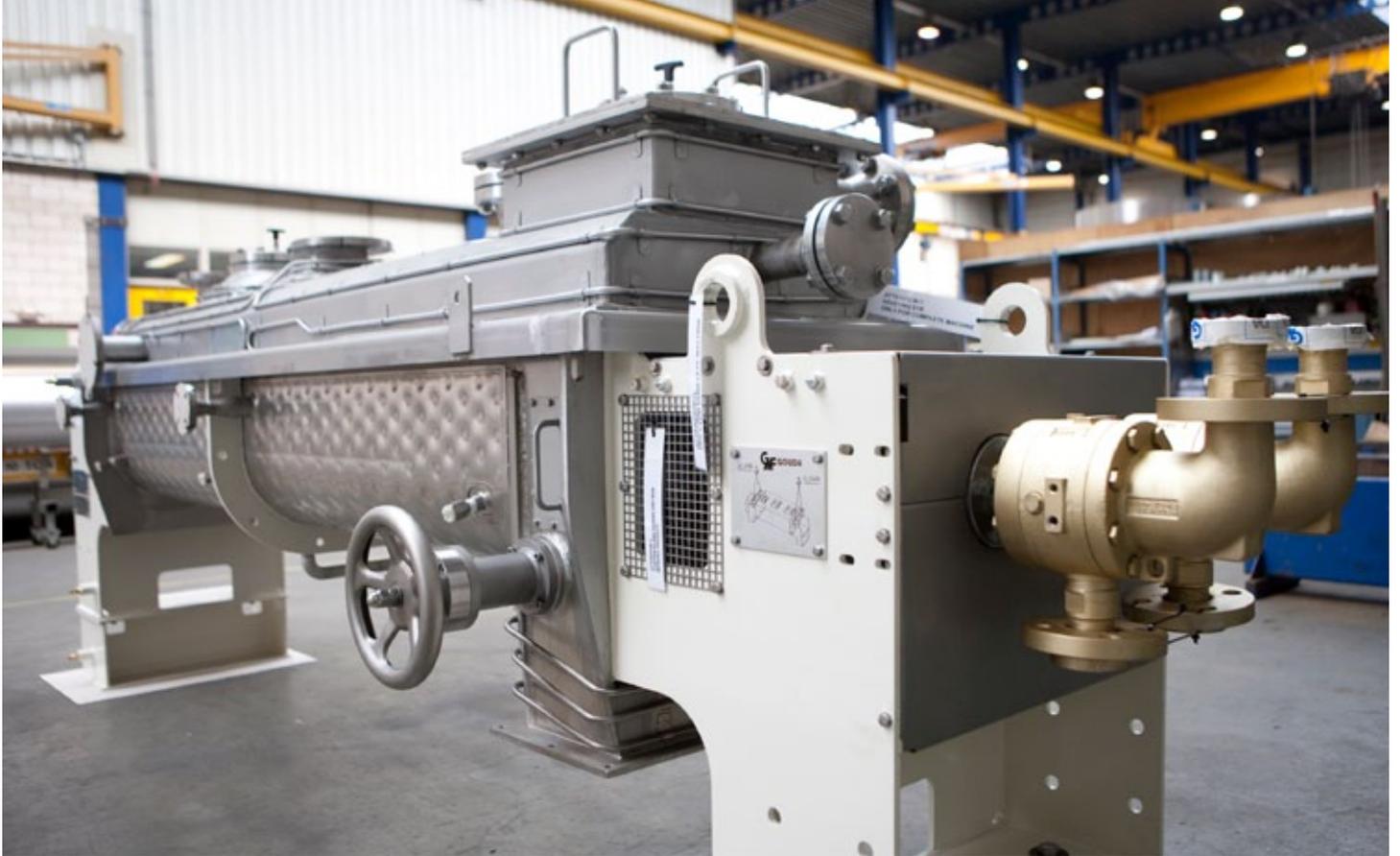
# Starch dextrinization

To improve viscosity



# Starch dextrinization

## For structural changes



▲ ANDRITZ Gouda paddle dryer

Dextrinization leads to a structural change in the starch, obtained by means of physical or chemical treatment. An important aspect of dextrinization is the properties of the raw material itself. The dextrinization process has to be adjusted to the properties of the raw material that can be obtained from potatoes, tapioca, rice, or corn.

Depending on the intended use of the starch, for example paper processing, binder for pigments, or glue production, it has to be dextrinated in such a way as to ensure that the structure fits the production process. Important process parameters for roasted dextrine are the amount of additives, the pH level, moisture content, roasting time, and roasting temperature. In close co-operation

with experienced partners for recipe development, ANDRITZ Gouda offers turnkey processing solutions for starch dextrinization from initial design, through lab tests and engineering, to delivery of the industrial equipment needed.

### The process

After tests have been completed successfully, dextrinization (step 5) can be implemented based on the following flow sheet. The native starch is mixed with the necessary additives and processed for a certain period and under defined conditions for maturing so that intensive mixing of starch and additives is guaranteed. The next process step is to dry the starch to the required moisture content in the ANDRITZ Gouda spiral flash

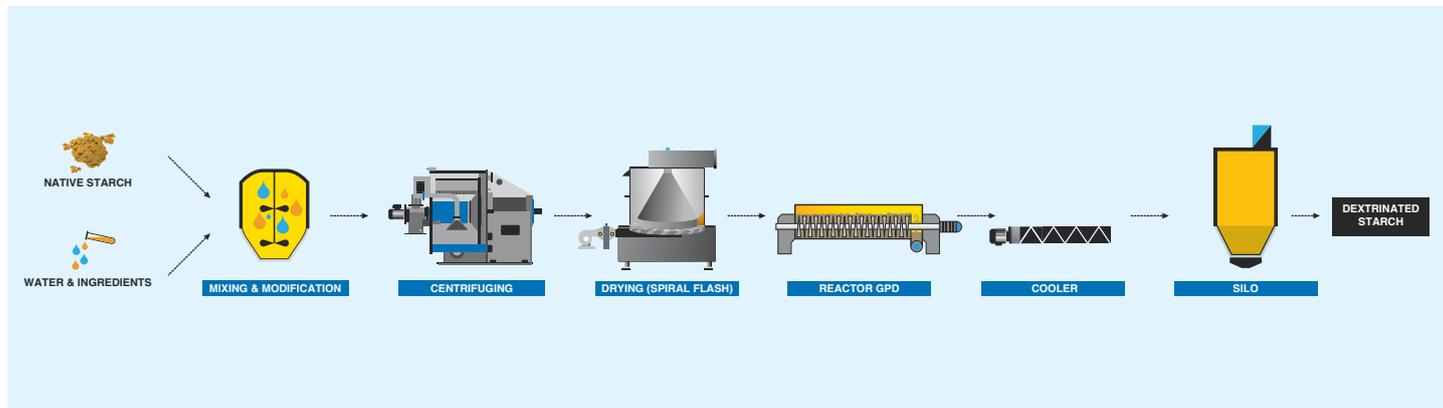
dryer. After drying, the process continues by roasting the starch under pre-defined conditions in the ANDRITZ Gouda paddle roaster, followed by cooling in the ANDRITZ Gouda paddle cooler.

### Benefits

- Improved viscosity
- Increased solubility
- Color treatment of starch (yellow or white)

# The process

## Drying and roasting



▲ Starch dextrinization process

### ANDRITZ Gouda paddle roaster/cooler

The ANDRITZ Gouda paddle roaster/cooler is the heart of the process. It has a heated or cooled trough containing rotating, heated, or cooled paddle shafts. The product comes into intensive contact with the walls of the trough, the shafts, and the paddles, thus heating or cooling the product. It is fed continuously into the front of the machine. Being oriented at a low angle of inclination, the trough leans slightly towards the unloading position, which makes the product move towards the outlet under the force of gravity. The paddles do not have any transport function, but are designed for maximum heat transfer. On the outlet side, the product exits from the machine via the overflow unit.

The operating principle of the ANDRITZ Gouda paddle roaster/cooler, with its low rotation speed of the paddle shaft and indirect roasting or cooling principle, contributes to the equipment having a negligible or even zero substance emission. Nevertheless, if a decision is made to use a gas cleaner, such as a gas scrubber or gas filter, its size can be kept small due to the low gas flow rates. After this heating and cooling process, the dextrinated starch is stored or packed in bulk bags (FIBCs).



Paddles designed for maximum heat transfer ▲

### Features

- Excellent control of the retention time and temperature
- Continuous process
- Uniform product quality
- No drying air required to dry the product
- Hardly any dust produced
- Better heat transfer

## ANDRITZ Gouda

ANDRITZ Gouda has been implementing complete process solutions for the environmental, chemical, and food industries for over 100 years. As a machine manufacturer as well as process solutions expert, ANDRITZ Gouda is able to handle all of the stages involved in designing and building plants, including engineering, service, installation, and commissioning.

ANDRITZ Gouda, as part of the international ANDRITZ GROUP, has several pilot plants available to test new materials, generate design data, and provide representative product samples. The proven calculation model for scaling up to industrial size ensures successful application in full-scale processing.



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