APPLICATION NOTE – DETERMINING RAW STARCH CONTENT

Application Need: Food producers need to use the standard method to determine the amount of raw starch in potatoes, corn, and other related products.

Solution: Use Reichert's polarimeters to apply the hydrochloric acid principle according to Ewers (analog to DIN 10 300 Bl.1) to get an accurate reading.

The Process
The starch sample material is dissolved and cooked in hot hydrochloric acid and, after precipitation of surrounding substances and filtering, the optical rotation is measured. From the optical rotation at 589 nm, the content of raw starch is calculated. Depending on the sample type and the assumed starch type, the acid concentration and cooking time vary.

The starch calculation is made according to the following formula:

$$\text{Content of raw starch in g/100g DS} = \frac{\alpha}{[\alpha]_D * l * E * (100-u)} * 10^6$$

with:

α	=	measured rotation in degree angular
$[\alpha]D$	=	specific rotation of starch at 589nm
l	=	sample tube length in dm
E	=	sample weight in g
u	=	humidity of the sample in %

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Product Recommendations:

Polar3 Polarimeter – Reichert Cat #14003000

Polar1 Polarimeter – Reichert Cat #14001000


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