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Operating instructions
KERN Easy touch App <Density>
Density determination function

KERN SET-04

Version 1.1
2021-02
GB

i	The current version of these instructions can also be found online under: https://www.kern-sohn.com/shop/de/DOWNLOADS/ Under the section Operating manuals

GB

KERN App Density

Version 1.1 2021-02

Operating instructions

SET-04

Contents

1 Weighing function Density – Density determination function

1.1 General hints

The density determination function allows the professional determination of the density of solid matter and liquids according to the gravimetric-Archimedean principle (for weighing activities in air and in a reference liquid).

Typically for this purpose are used a precision balance with a resolution of 0.01 g or 0.001 g or an analytical balance with 0.1 mg and a densitiy determination set.

The density determination set contains all the accessories and aids required for easy and precise density determination.

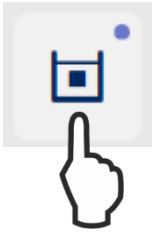
Quickly and at low cost we find out the volume of the attached plummet in our DKD-calibration laboratory.

For further information please see KERN-Homepage (www.kern-sohn.com).

Notes:

- Take into account the attached operating manual of the density set.
- Density determination with help of the underfloor weighing device is recommended for samples that do not fit, due to size or shape, in the sample dish or glass beaker of the density determination set.

1.2 Select function



In the FUNCTIONS menu click the symbol **<Density>**, the start screen appears.

For density determination, the following two settings are available:

- ➢ Density determination of solid bodies (density ≤ / ≥ 1), see chap. 1.3
- ➢ Density determination of liquids, see chap. 1.4

1.3 Determine density of a solid matter

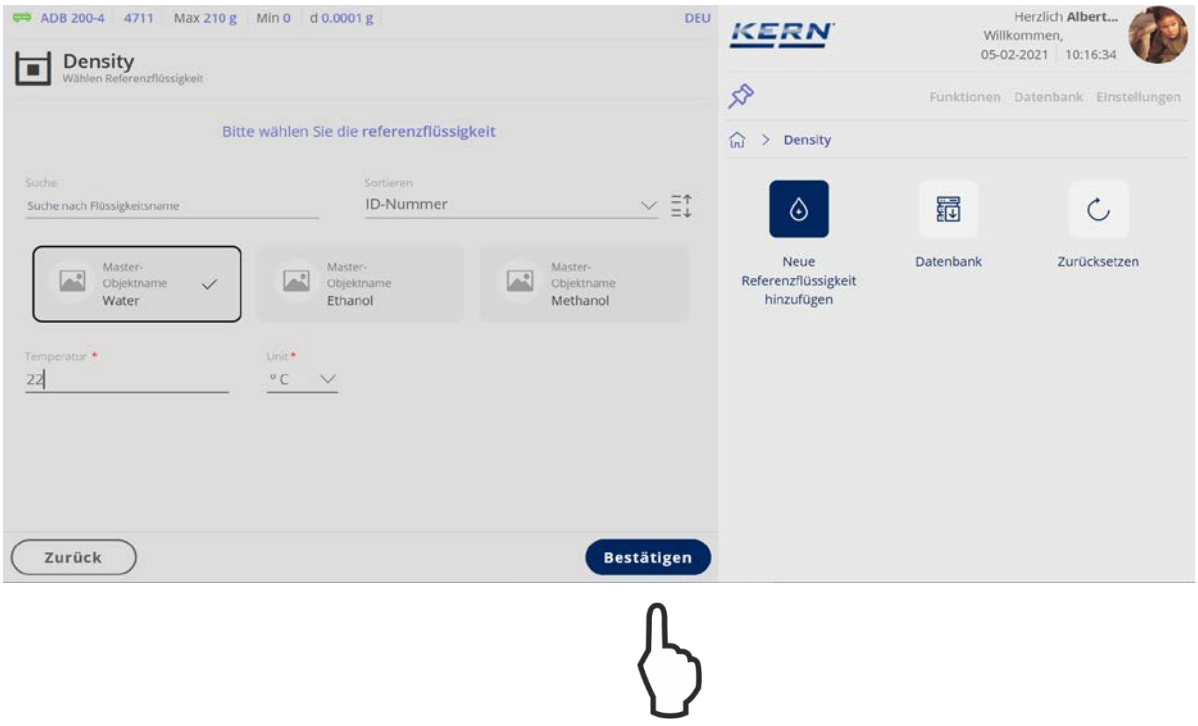
In this case, the solid matter is first weighed in air and then in the reference liquid, whose density is known. From the weight difference results the buoyancy from where the software calculates the density.

Preparing the balance with density determination set
(Take into account the operating manual of the density set).

Tap **<Measuring solid body>**.

The screen appears for selection of the reference liquid in which the measurement shall take place.

In the master database of Easy Touch the density tables of various liquids are stored by the manufacturer.



Select type and temperature of the reference liquid and tap **<Confirm>**.

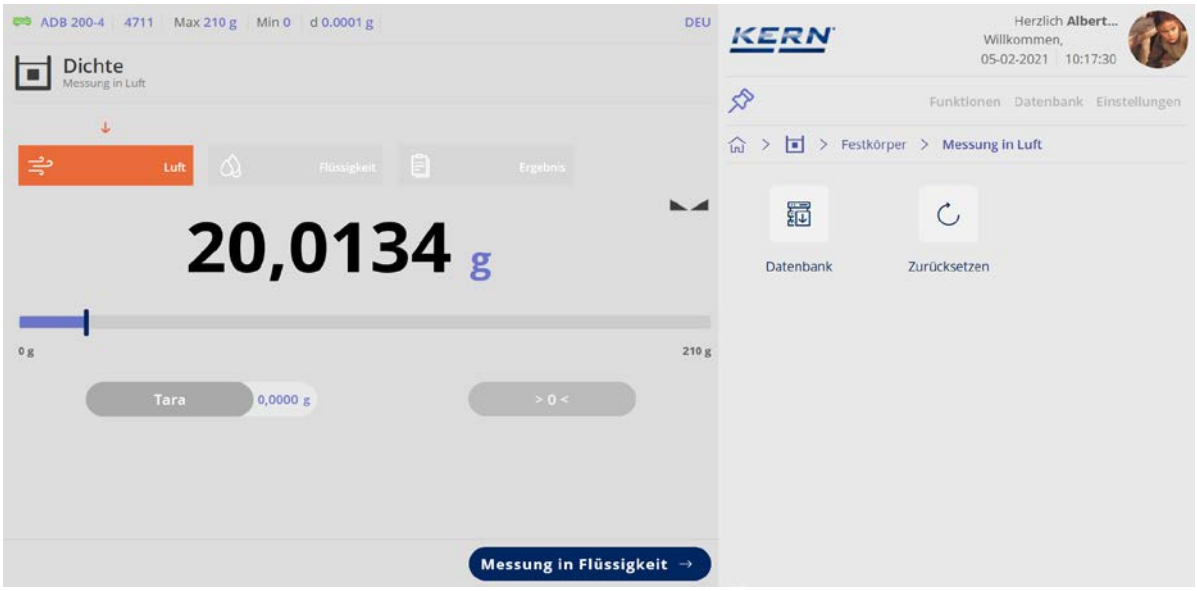
If your desired reference liquid is not stored in the database, procede as follows:

In the master menu tap the symbol
<Add new reference liquid>.

The input window for the new liquid appears.

Fill out all fields accordingly and save as master data record.

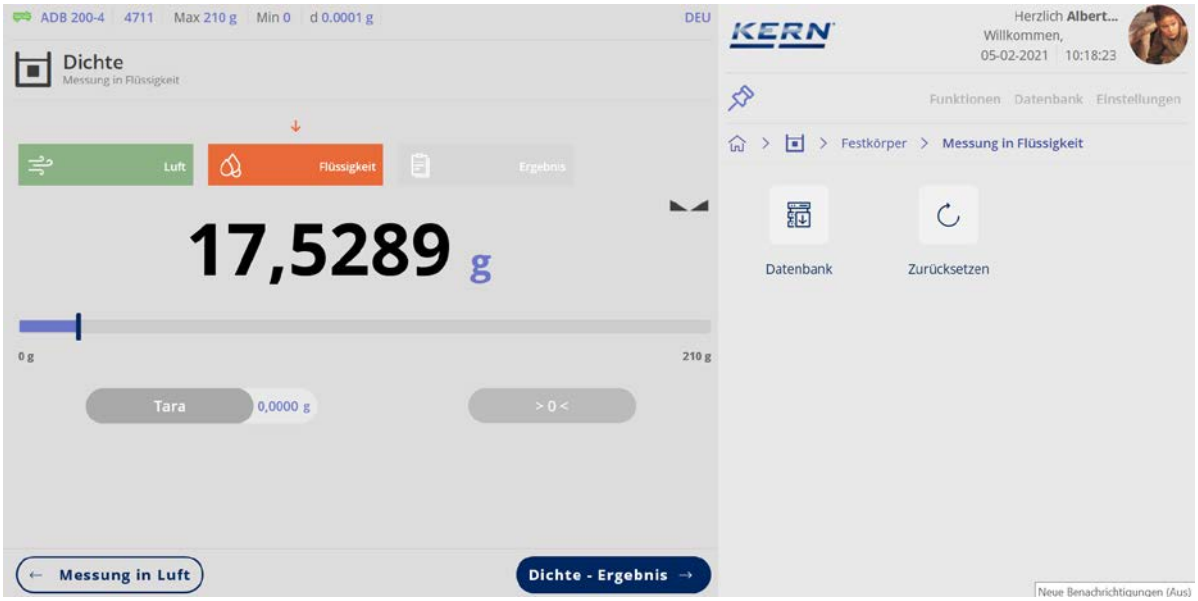
The screen for weighing in air appears.
Put the sample into the upper sample dish, the weight in air is diplayed.



Tap **<Measuring in liquid>**.

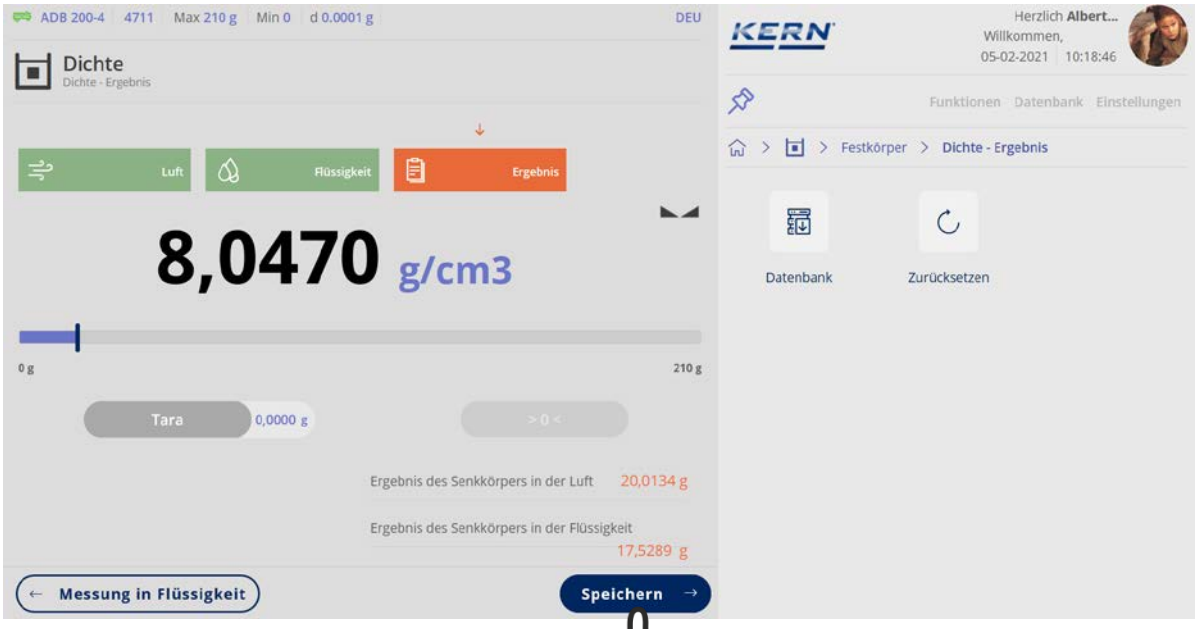
The weight of the solid body in air is saved.

Put the sample into the lower sifting bowl, the weight of the sample in liquid is displayed.



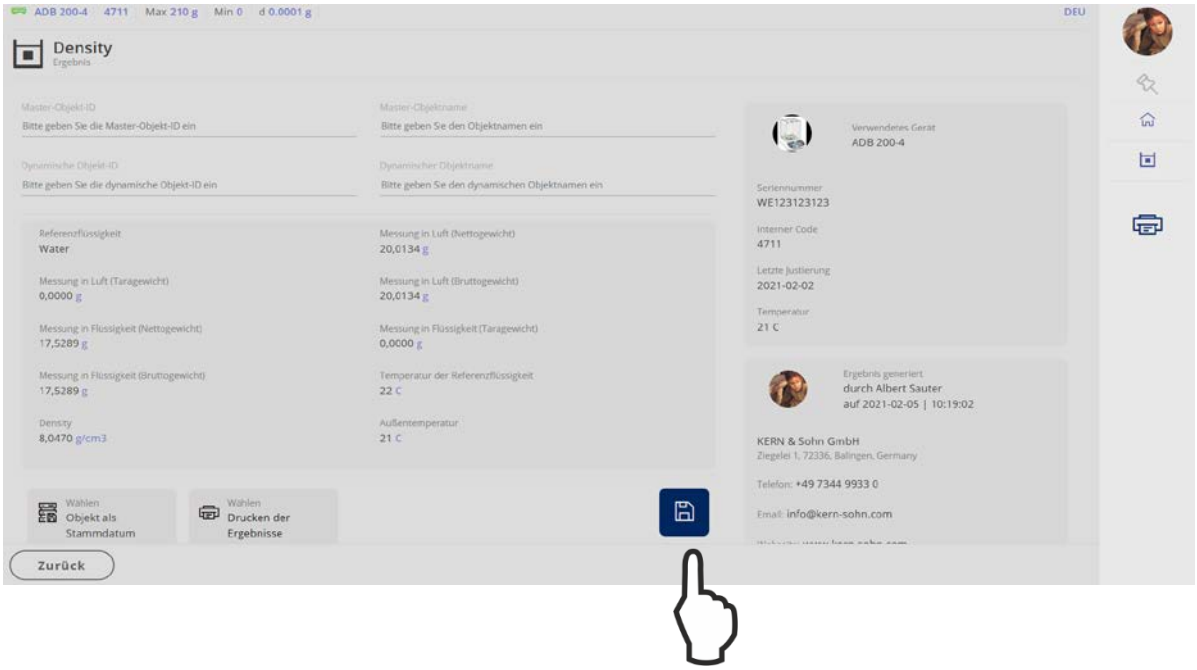
Tap **<Density - result>**.

The density of the sample is calculated and displayed.



Tap **<Save>**.

The measuring data record is displayed and can be printed out or saved as master data record, if necessary.



After saving the balance automatically returns to density determination mode. A new density determination can be started.

1.4 Determining density of a liquid

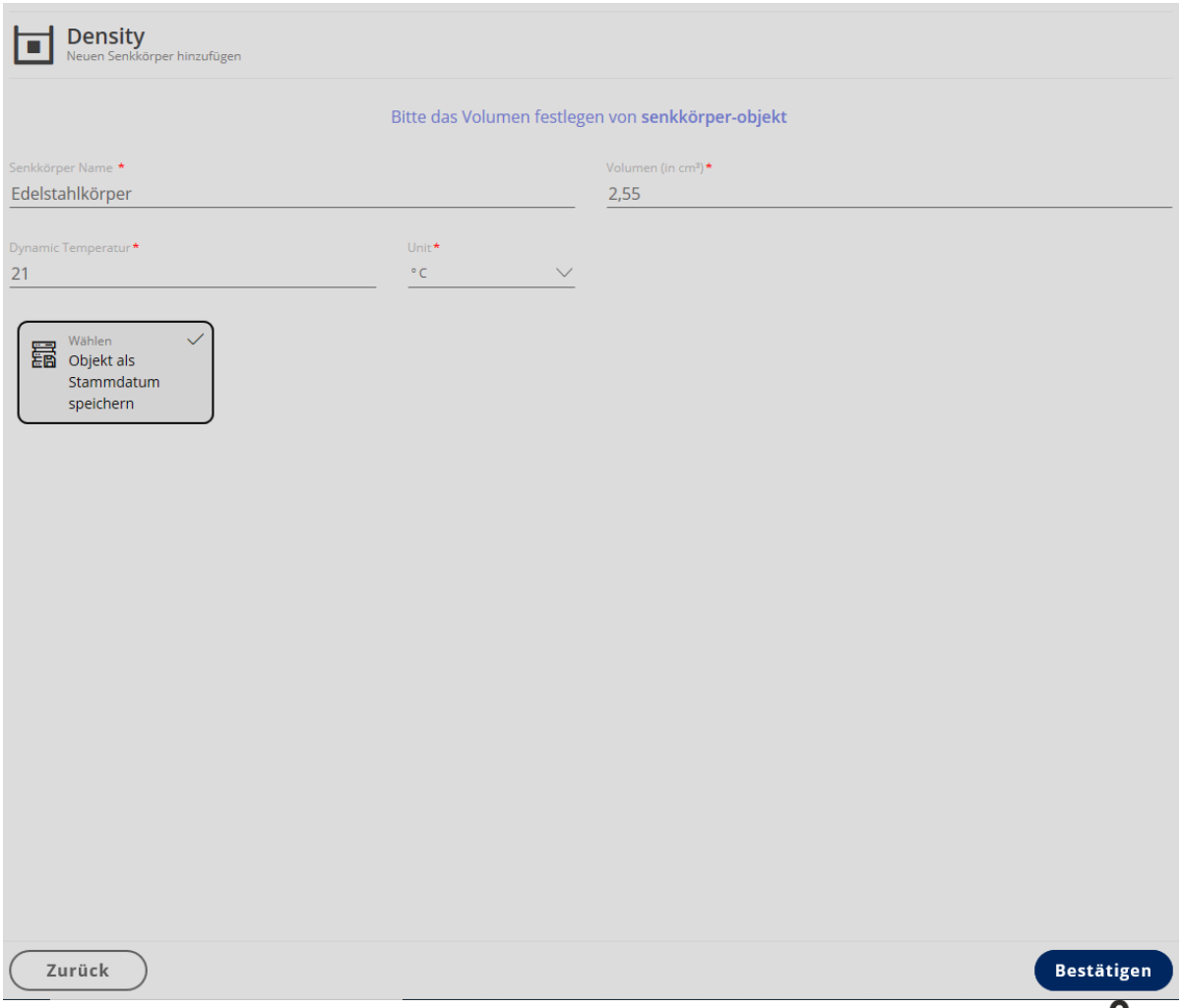
For this purpose a plummet with known volume will be used. The plummet is weighed first in air and then in the liquid whose density is to be determined. From the weight difference results the buoyancy from where the software calculates the density.

Preparing the balance with density determination set
(Take into account the operating manual of the density set).

Tap **<Measuring liquid>**.

At the first commissioning the window to create a plummet object will appear.

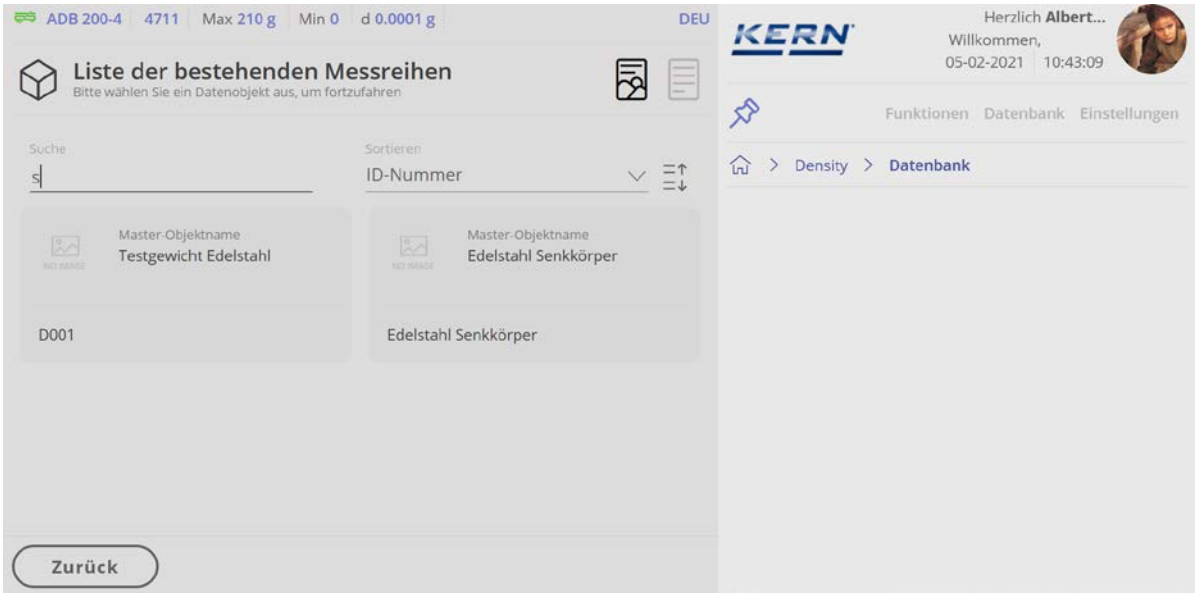
For that purpose fill out the required obligatory fields.

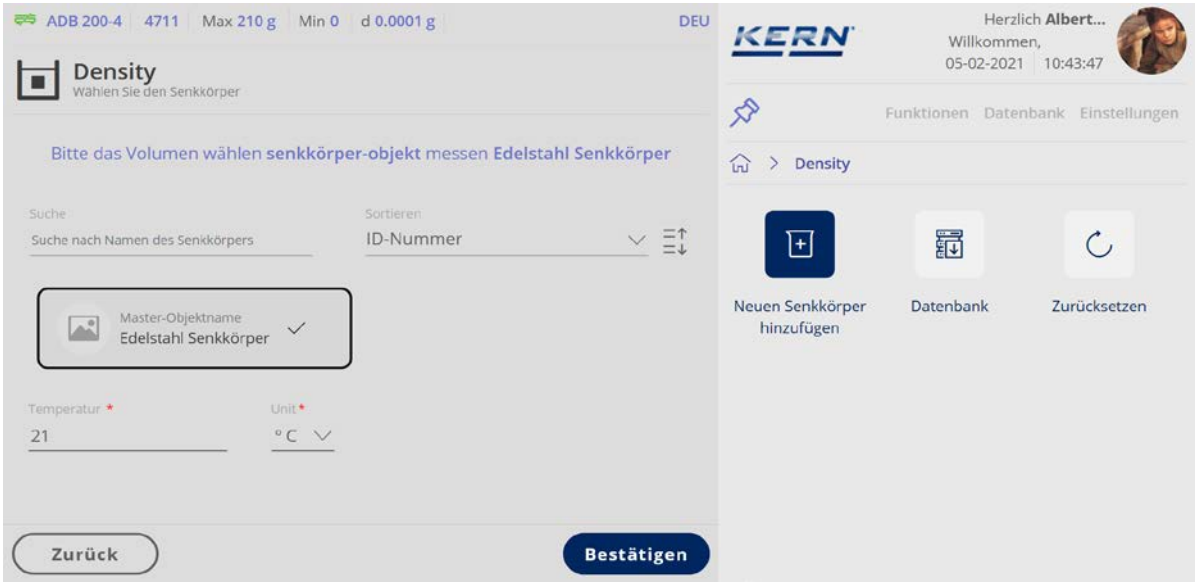


To save tap **<Confirm>**.

Moreover this new plummet can also be stored as master data record, in order to use it for further density determinations.

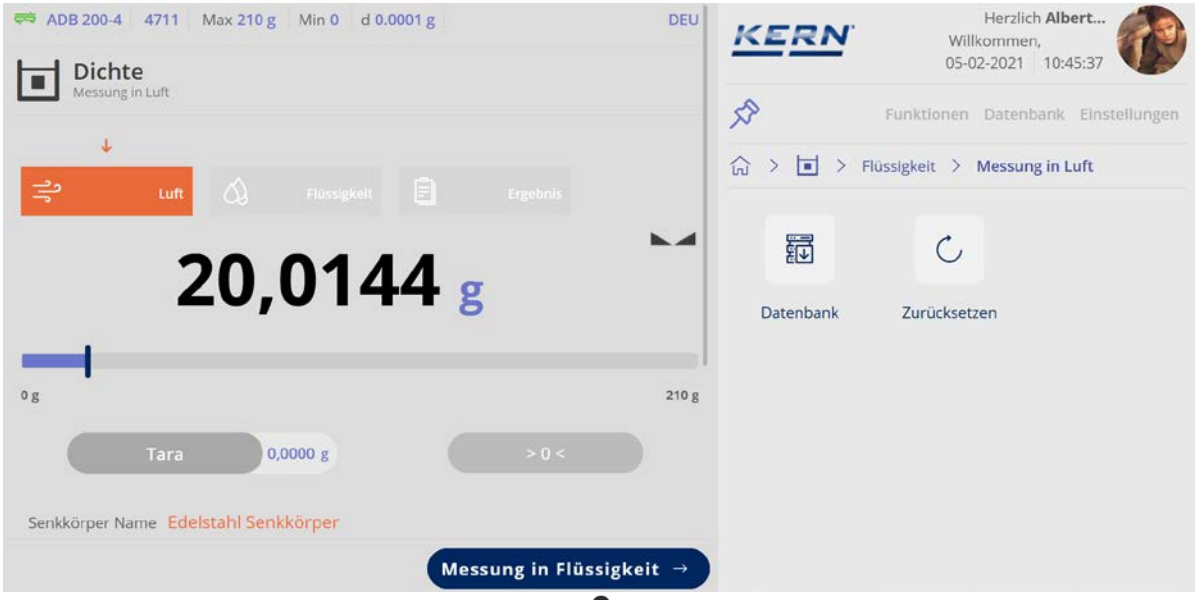
If a plummet object has already been created, it appears in the display and can be selected and used:





To save tap **<Confirm>**.

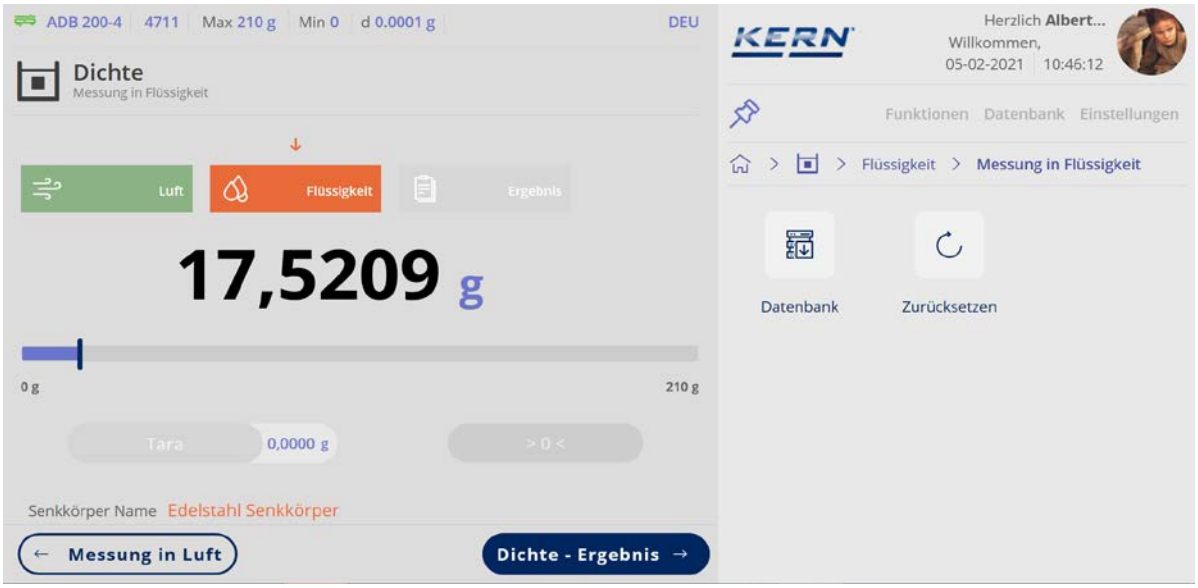
The screen to calculate the weight of the plummet in air appears.
Put the plummet into the upper sample dish of the density determination set.
The weight of the plummet in air will be displayed:



Tap **<Measuring in liquid>**.

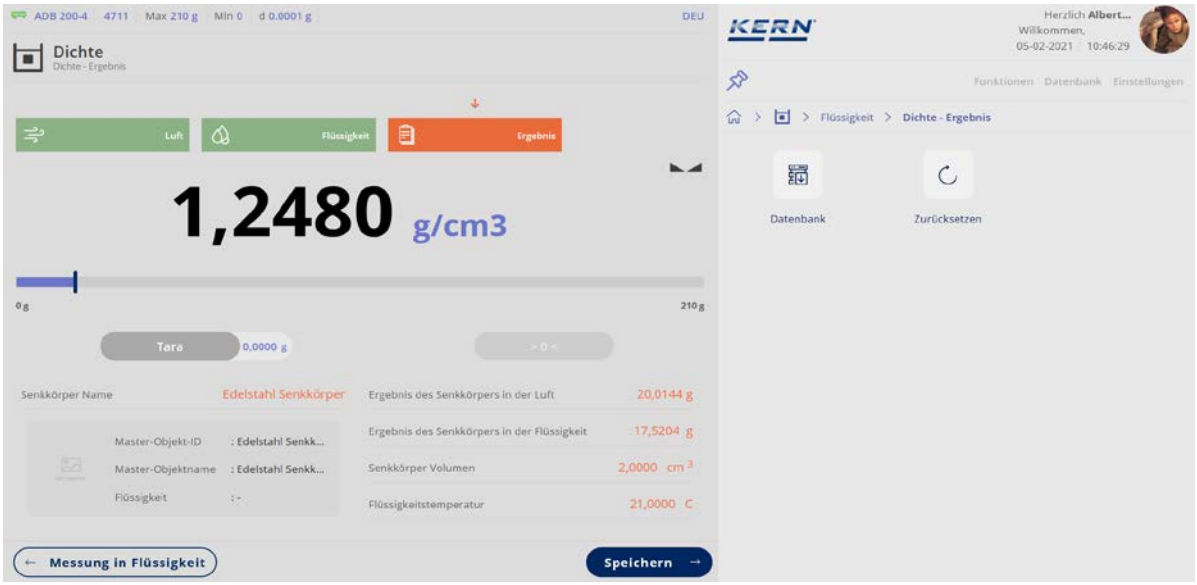
The weight of the plummet in air is saved.

The screen for weighing in the test liquid appears. Put the plummet into the lower sifting bowl. The weight of the plummet in the test liquid will be displayed:



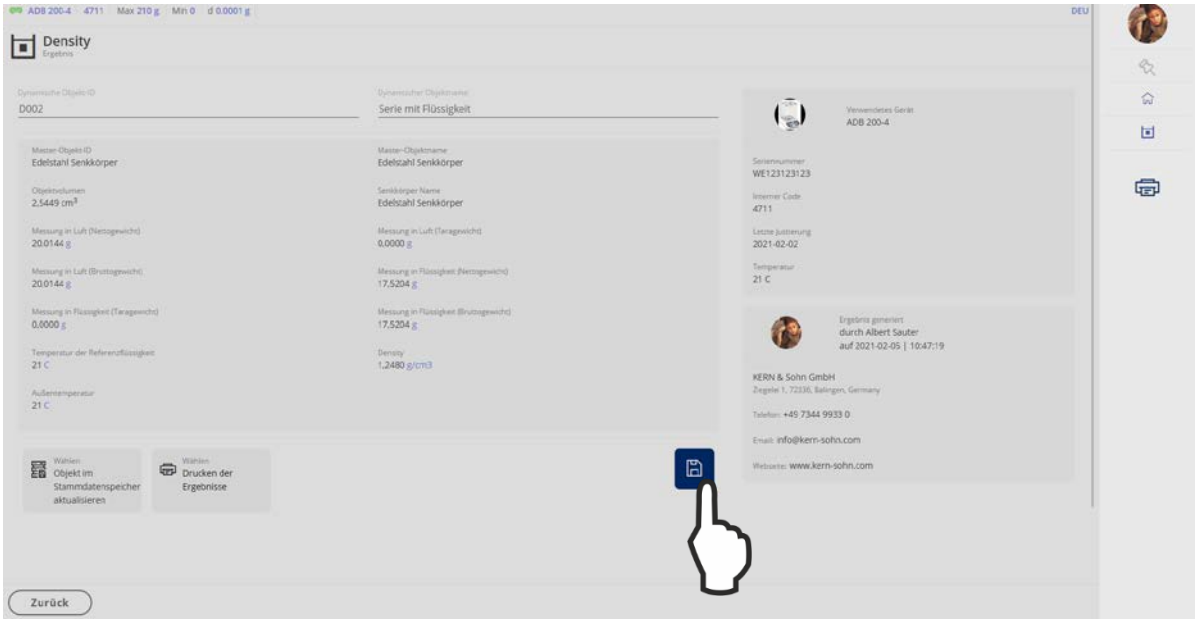
Tap **<Density - result>**.

The density of the liquid is calculated and displayed.



Tap **<Save>**.

The measuring data record is displayed and can be printed out or saved as master data record, if necessary.



After saving the balance automatically returns to density determination mode. A new density determination can be started.