PROCESS IS MAINLY USED AFTER HEAVY LIQUID MINERAL SEPARATION

1st step Hand magnet

Remove the ferromagnetic fraction.

For this process, the bar shaped hand magnet has to be covered by one paper sheet before it is moved over the smooth dispersed mineral fraction on a paper sheet. Lift the magnet with the ferromagnetic particles and release them over an other clean sheet of paper. This process has to be repeated until no ferromagnetic minerals are left in the mineral fraction.

Note: If you take the hand magnet to the vial you can firstly check whether there is ferromagnetic material in the sample and secondly hold back first bit of ferromagnetic minerals.

2nd step Frantz® magnetic separator

Front angle: is always set at 25°

Side angle: is usually set at 10° but depending on specific mineral separation this angle can be changed hence this angle must be noted on the label.

Vibration can vary between 6 and 8 depending on sample behaviour.

1) Check if the Frantz® magnet is completely clean if not do additional cleaning*!
2) Put the heavy liquid separated sample in the cone
3) Switch the main power button on, beige button next to the heating (the magnet has to be off!)
4) Turn magnet on
5) Set Amperage
6) Switch vibrator on
7) Observe the mineral flow and eventually adjust the Amperage until the amount of magnetic fraction is less then 50% of the total mineral flow

8) As soon as the correct amperage is set, put already separated mineral fraction from the grey cup back into the cone for further separation increasing amperage (the black cup is for the magnetic part!)
9) For each sample keep the different fractions described further down
10) Check the separated mineral fractions under microscope and observe the change of mineral types with change of Amperage

Mineral compound is usually separated in six different fractions:

- *Ferromagnetic fraction (hand magnet)*
- *0.2 – 0.3A* *possible variation <0.5*
- *0.5 – 0.7A* *possible variation >0.4 - < 1.0*
- *1.2A* *absolute*
- *1.7A* *absolute* *magnetic*
- *1.7A* *absolute* *non magnetic*

Note: These divisions are just a guideline for common use. It might be possible you need to separate less or more fractions.

Additional equipment to use:

- Binocular (stereo) microscope

* Cleaning:

- with alcohol, do not touch inside the cups and Frantz® magnet rail with your fingers!

Abbreviations for labelling:

FER…… ferromagnetic fraction

M..... magnetic fraction (= higher susceptibility paramagnetic)

NM…… non magnetic fraction (= lower susceptibility paramagnetic + diamagnetic)

e.g.: NM **10-1.7**…. 10° for side angle and 1.7A stands for Ampere