CLAIMS:

1. A method for monitoring a drum of a centrifugal separator for leakage**, characterized by the following steps of**:
   - A providing the centrifugal separator comprising an emptied drum and providing a value for a reference volume of the drum;
   - B measuring, by means of a measuring device, an inflowing volume at least until the reference volume of the drum is reached;
   - C measuring a pressure by means of a pressure sensor in the outlet of a phase.
   - D evaluating the temporal sequence of the measured values of the pressure after the reference volume has been reached, and thus determining a pressure rise, and
   - E outputting a signal if the determined pressure rise occurs outside of a time interval after the reference volume has been reached.

2. The method according to claim 1, **characterized in that** the provision of the value for a reference volume of the drum, preferably during commissioning of the separator, takes place in the following steps of:
   - I. providing a centrifugal separator with a predefined reference volume depending on its geometric dimensions;
   - II. filling the drum and determining the volume of liquid required to fill the drum, which corresponds to the currently available free drum volume of the drum, until a limit level is reached.

3. The method according to claim 2, **characterized in that** the limit level for indicating the maximum filling of the drum is detected by measurement by means of one or more pressure sensors and/or by a limit level switch in the outlet of a phase.

4. The method according to one of the preceding claims, **characterized in that** the pressure sensor and/or the limit level switch is arranged at the outlet of the heavier liquid phase of the separator.

5. The method according to one of the preceding claims, **characterized in that** the liquid introduced for filling the drum is flushing medium, wherein a flushing medium inlet of the separator for filling the drum and a product inlet of the separator open into a common inlet pipe.

6. The method according to one of the preceding claims, **characterized in that** the volume required to fill the drum is determined by a flow meter.

7. The method according to one of the preceding claims, **characterized in that** the flow meter is arranged in or at the product inlet of the separator and/or particularly preferably in or at the flushing medium inlet.

8. The method according to one of the preceding claims, **characterized in that** the signal initiates an output at an output unit, preferably a warning, and/or performs an immediate action on the operation of the separator, in particular initiates emptying and/or a shutdown of the separator.

9. The method according to one of the preceding claims, **characterized in that** steps A-E are repeated at least twice, wherein in step B a partial or complete filling can take place after a partial or complete emptying of the drum.

10. The method according to one of the preceding claims, **characterized in that** at least steps B-E, preferably the entire method, are carried out while the separator is rotating.

11. The method according to one of the preceding claims, **characterized in that** the extent of the leakage is determined and output by evaluating the pressure rise and the volume supplied within a time interval.

12. The method according to one of the preceding claims, **characterized in** that the entire method is carried out without dismantling the separator, in particular the drum.