

» 【污染指数(SDI)测定仪】

$$SDI = \frac{P_{30}}{T_t} = \frac{100 \left(1 - \frac{T_1}{T_2}\right)}{T_t}$$

P_{30} —在0.21Mpa进水压力下的堵塞指数;

T_t —总的测定时间(分), 通常为 T_{15} , 此时 $P_{30} < 75\%$,

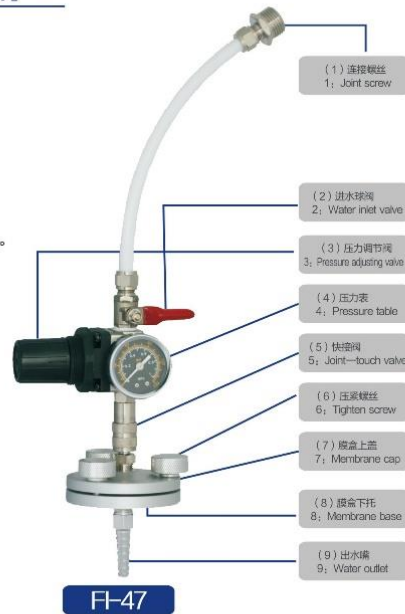
不然测试 T_{10} 或 T_5 , 使此时的 $P_{30} < 75\%$;

T_1 —初始时收集500ml水样所需的时间(秒);

T_2 —经 T_1 (通常 T_{10})后收集500ml水样所需的时间(秒)。

备注:

- 1、接取500ml水样所需时间大约为接取100ml水样所需时间的5倍。如果接取500ml所需的时间远远大于5倍, 则在计算SDI时, 应采用接取100ml所需的时间。
- 2、为了精确测量SDI值, P_{30} 不应超过75%; 如果 P_{30} 超过75%, 应重新实验并在较短时间内获取 T_2 值。



【SDI METER OPERATING INSTRUCTION】

P_{30} —Jam Index under the inlet pressure 0.21Mpa

T_t —Usually, the total examination time (min) is T_{15} , with $P_{30} < 75\%$, otherwise, time

T_{10} or T_5 , with $P_{30} < 75\%$

T_1 —The first time when the 500ml water to be filtrated(second)

T_2 —The time(usually, T_{15} , second) when 500ml water to be filtrated after T_1

Notes: ①The time taking 500ml water sample is approximate 5 times than the time taking 100ml water sample, if it's much longer than 5 times, time the time taking 100ml water sample to be sued to work out SDI.

②To make sure the precision, P_{30} should be less than 75%, if P_{30} moer tha 75%, re-exam and get T_2 in shorter time.

» 【何谓SDI?】

SDI值俗称污泥密度指数。在纯水系统——特别是反渗透(RO)系统中, SDI被广泛用于预测水中胶体以及颗粒物对RO膜的堵塞速度。由于水源的水质经常变化, 所以常常需要每月进行SDI值的检测。

SDI仪(即污染指数仪)能够计算测量进水中悬浮物质的相对数量。当进水透过0.45 μ m膜片时, SDI值反映了水中颗粒物污堵0.45 μ m孔径膜片的速度。美国材料实验协会(ASTM)选择0.45 μ m孔径膜片的原因就在于其容易受到胶体物质、而不是硬颗粒物(例如: 砂子或水垢等)的堵塞。SDI值通常起“预警”作用, 以确保进水中的颗粒物不会污堵反渗透膜。

【WHAT IS SDI?】

SDI is the abbreviation of Silt Density index, which is a measure for the fouling capacity of water in reverse osmosis system. As the quality of source water changes frequently, the feed water should be measured by a SDI apparatus weekly or monthly.

SDI can measure the relative quantity of suspended matter in thd feed water. The test measures the rate at which a 0.45-micrometre filter is plugged when subjected to a constant water pressure of 206.8 kpa(30 psi).ASTM choose the films with the diameter of 0.45 μ m as the apparatus?filter, because this film can easily be fouled by suspended matter instead of solid particles, such as sand or scales. So SDI value can work as an alarm to ensure thd solid particles in the feed water not to foul reverse osmosis membrane.

