

Recherche & Innovation – Centre de Lyon

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From :	To:
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	Сору:

NaTFSI: solubility in water and pH value

Solubility of Sodium bis TrifluoroSulfonyl Imide in water has been measured at 23,5°C and was found to be over 40% w/w. At that value, pH of the clear solution was found at 9,3 pH unit.

Best Regards

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Recherche & Innovation – Centre de Lyon

1 - Scope:

NaTFSI (Sodium bis TrifluoroSulfonyl Imide) has been recently developed and some physical properties are required in order to fulfil the product registration. Among these properties, solubility in water and pH determination have been requested.

2 – Experimental part:

Equipment:

- 250 ml glass Becher
- Magnetic stirrer
- Temperature sensor PT100 type Accuracy: +/- 0,1°C
- pH sensor Metler-Toledo S220 type Accuracy: +/- 0,1 pH unit

Raw material:

- Deionized water
- Solid NaTFSI

Operational procedure:

- 100 g of deionized water is added to the Becher equipped with a magnetic stirrer and a T° sensor
- Stirring is switched on at room temperature
- NaTFSI is added progressively by 5g portion and dissolution is observed; stirring is stopped and if the solution is clear, another 5g portion is added
- When solution is becoming heterogeneous (some solid particles are remaining in suspension), solubility test is stopped and pH and T° are registered
- Solubility value corresponds to the last but one NaTFSI added portion.

3 - Results:

According to the operational procedure, 75g of NaTFSI were added to 100g of deionized water without any remaining particle observable.

At that time, solution temperature was at 23,5°C and pH value was measured at 9,3 pH units

Solubility calculated for NaTFSI in water is then: 75/175= 42,8% at 23,5°C