COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Ytterbium fluoride; YbF_3; [13760-80-0] (2) Dimethylsulfoxide; C_2H_6OS; [67-68-5]	Kirmse, E.M. *Wiss. Hefte, Paed. Inst. Koethen* 1978, *2*, 85-90.
VARIABLES:	PREPARED BY:
Room Temperature	T. Mioduski

EXPERIMENTAL VALUES:

The solubility of YbF_3 in $(CH_3)_2SO$ at room temperature was given as

0.04 mass %.

The corresponding molality calculated by the compiler is

$0.0017 \text{ mol kg}^{-1}$

The solid phase was dried in a desiccator over P_4O_{10} and the Yb:F ratio found to be almost 1:3.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
Isothermal method. About 100 mg of YbF_3 was added to 10-20 cm^3 of solvent, and the mixture mechanically agitated at room temperature for 100 h. 5-10 g of saturated solution were removed by decanting or by centrifuging, and the solution evaporated to dryness. The residue was heated with about 10 cm^3 of 10% KOH solution for 1-2 h to obtain solid $Yb(OH)_3$ and a basic F^- solution. The precipitate was washed, dissolved in aq HCl, and Yb determined several times by complexometric titration with potentiometric end-point detection (1). The fluoride content in the filtrate was determined photometrically using Al-Eriochrome cyanine color lake indicator (2).

The reported solubility is a mean of "numerous parallel determinations," or "at least two parallel determinations."

SOURCE AND PURITY OF MATERIALS:
Yb_2O_3 (source and purity not specified) was dissolved in HCl and the fluoride precipitated by addition of aq HF. The solid produced was $YbF_3.0.5H_2O$ and was dehydrated by washing with acetone followed by drying at 310°C for 120 hours.

The solvent was dried and purified by "standard methods."

ESTIMATED ERROR:
Soly: results with relative errors exceeding 50% were rejected.

Temp: nothing specified.

REFERENCES:
1. Schilbach, U.; Kirmse, E.M. *Z. Chem.* 1974, *14*, 484.
2. Schilbach, U.; Hetze, I.; Kirmse, E.M. *Chemia Analityczna* 1975, *20*, 33.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Ytterbium fluoride; YbF_3; [13760-80-0] (2) Pyridine; C_5H_5N; [110-86-1]	Kirmse, E.M. *Wiss. Hefte, Paed. Inst. Koethen* 1978, *2*, 85-90.
VARIABLES:	**PREPARED BY:**
Room Temperature	T. Mioduski

EXPERIMENTAL VALUES:

The solubility of YbF_3 in pyridine at room temperature was given as

0.03 mass %

The corresponding molality calculated by the compiler is

1.3×10^{-3} mol kg^{-1}

The solid phase was dried in a desiccator over P_4O_{10} and the Yb:F ratio determined to be almost 1:3.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Isothermal method. About 100 mg of YbF_3 was added to 10-20 cm^3 of solvent, and the mixture mechanically agitated at room temperature for 100 h. 5-10 g of saturated solution were removed by decanting or by centrifuging, and the solution evaporated to dryness. The residue was heated with about 10 cm^3 of 10% KOH solution for 1-2 h to obtain solid $Yb(OH)_3$ and a basic F^- solution. The precipitate was washed, dissolved in aq HCl, and Yb determined several times by complexometric titration with potentiometric end-point detection (1). The fluoride content in the filtrate was determined photometrically using Al-Eriochrome cyanine color lake indicator (2).

The reported solubility is a mean of "numerous parallel determinations," or "at least two parallel determinations."

SOURCE AND PURITY OF MATERIALS:

Yb_2O_3 (source and purity not specified) was dissolved in HCl and the fluoride precipitated by addition of aq HF. The solid produced was $YbF_3.0.5H_2O$ and was dehydrated by washing with acetone followed by drying at 310°C for 120 hours.

The solvent was dried and purified by "standard methods."

ESTIMATED ERROR:

Soly: results with relative errors exceeding 50% were rejected.

Temp: unknown.

REFERENCES:

1. Schilbach, U.; Kirmse, E.M. *Z. Chem.* 1974, *14*, 484.

2. Schilbach, U.; Hetze, I.; Kirmse, E.M. *Chemia Analityczna* 1975, *20*, 33.