COMPONENTS:
(1) Ytterbium fluoride; YbF₃; [13760-80-0]
(2) Dimethylsulfoxide; C₄H₆OS; [67-68-5]

ORIgINAL MEASUREMENTS:
Kirmse, E.M.

VARIABLES:
Room Temperature

EXPERIMENTAL VALUES:
The solubility of YbF₃ in (CH₃)₂S0 at room temperature was given as:
0.04 mass %.

The corresponding molality calculated by the compiler is
0.0017 mol kg⁻¹

The solid phase was dried in a desiccator over P₄O₁₀ and the Yb:F ratio found to be almost 1:3.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
Isothermal method. About 100 mg of YbF₃ was added to 10-20 cm³ 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 cm³ 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 endpoint 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:
Yb₂O₃ (source and purity not specified) was dissolved in HCl and the fluoride precipitated by addition of aq HF. The solid produced was YbF₃.0.5H₂O 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:
(1) Ytterbium fluoride; YbF₃; [13760-80-0]
(2) Pyridine; C₅H₅N; [110-86-1]

VARIABLES:
Room Temperature

EXPERIMENTAL VALUES:
The solubility of YbF₃ in pyridine at room temperature was given as
0.03 mass %
The corresponding molality calculated by the compiler is
1.3 x 10⁻³ mol kg⁻¹
The solid phase was dried in a desiccator over P₄O₁₀ and the Yb:F ratio determined to be almost 1:3.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
Isothermal method. About 100 mg of YbF₃ was added to 10-20 cm³ 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 cm³ 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:
Yb₂O₃ (source and purity not specified) was dissolved in HCl and the fluoride precipitated by addition of aq HF. The solid produced was YbF₃·0.5H₂O 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: