**COMPONENTS:**

1. Europium fluoride; EuF$_3$; [13765-25-8]
2. Alkyl ethers

**ORIGINAL MEASUREMENTS:**

Dressler, H.

**VARIABLES:**

Room Temperature

**PREPARED BY:**

T. Mioduski and M. Salomon

**EXPERIMENTAL VALUES:**

<table>
<thead>
<tr>
<th>solvent</th>
<th>EuF$_3$ solubility</th>
<th>solid phase EuF:solvent ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-methoxydecane; C$<em>{11}$H$</em>{24}$O$_3$; [7289-52-3]</td>
<td>0.03</td>
<td>1.44 x 10$^{-4}$</td>
</tr>
<tr>
<td>1-(chloromethoxy)butane; C$<em>{5}$H$</em>{11}$ClO$_3$; [2351-69-1]</td>
<td>0.02</td>
<td>9.6 x 10$^{-5}$</td>
</tr>
</tbody>
</table>

**AUXILIARY INFORMATION**

**METHOD/APPARATUS/PROCEDURE:**

Method analogous to that described in (1). No other information available.

**SOURCE AND PURITY OF MATERIALS:**

It appears that the fluoride was prepared as in (1). In spite of drying the fluoride by two methods at 573 K, the Eu:F:H$_2$O ratio was 1:3.01:0.23.

No other information available.

**ESTIMATED ERROR:**

Nothing specified.

**REFERENCES:**

**COMPONENTS:**
(1) Europium fluoride; EuF₃; [13765-25-8]
(2) Dimethylsulfoxide; C₂H₆OS; [67-68-5]

**VARIABLES:**
Room Temperature

**EXPERIMENTAL VALUES:**
The solubility of EuF₃ in (CH₃)₂SO at room temperature was given as 0.03 mass %

The corresponding molality calculated by the compiler is 1.4 x 10⁻³ mol kg⁻¹

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

**METHOD/APPARATUS/PROCEDURE:**
Isothermal method. About 100 mg of EuF₃ 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 Eu(OH)₃ and a basic F⁻ solution. The precipitate was washed, dissolved in aq HCl, and Eu 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:**
Eu₂O₃ (source and purity not specified) was dissolved in HCl and the fluoride precipitated by addition of aq HF. The solid produced was EuF₃.0.5H₂O 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.

**REFERENCES:**
**COMPONENTS:**

1. Europium fluoride; EuF$_3$; [13765-25-8]
2. Pyridine; C$_6$H$_5$N; [110-86-1]

**ORIGINAL MEASUREMENTS:**

Kirmse, E.M.


**VARIABLES:**

Room Temperature

**PREPARED BY:**

T. Mioduski

**EXPERIMENTAL VALUES:**

The solubility of EuF$_3$ in pyridine at room temperature was reported to be

0.15 mass %

The corresponding molality calculated by the compiler is

$7.2 \times 10^{-3}$ mol kg$^{-1}$

The solid phase was dried in a desiccator over P$_2$O$_5$ and the Eu:F ratio found to equal almost 1:3.

**AUXILIARY INFORMATION**

**METHOD/APPARATUS/PROCEDURE:**

Isothermal method. About 100 mg of EuF$_3$ 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 Eu(OH)$_3$ and a basic F$^-$ solution. The precipitate was washed, dissolved in aq HCl, and Eu 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:**

Eu$_2$O$_3$ (source and purity not specified) was dissolved in HCl and the fluoride precipitated by addition of aq HF. The solid produced was EuF$_3\cdot0.5$H$_2$O 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."

**REFERENCES:**