COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Samarium fluoride; SmF_3; [13765-26-7] (2) Alcohols	Kirmse, E.M. *Wiss. Hefte, Paed. Inst. Koethen* 1978, *2*, 85-90.
VARIABLES:	**PREPARED BY:**
Room temperature	T. Mioduski and M. Salomon

EXPERIMENTAL VALUES:

solvent			SmF_3 solubility[a,b] mass %	mol kg^{-1}
methanol	CH_4O;	[67-56-1]	0.01_5	7.2×10^{-4}
ethanol	C_2H_6O;	[64-17-5]	0.02	1×10^{-3}

[a] Molalities calculated by the compilers.

[b] Solid phases were dried in a desiccator over P_4O_{10} and the Sm:F ratio found to equal almost 1:3.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

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

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

SOURCE AND PURITY OF MATERIALS:

Sm_2O_3 (source and purity not specified) was dissolved in HCl and the fluoride precipitated by addition of aq HF. The solid produced was $SmF_3.0.5H_2O$ and was dehydrated by washing with acetone followed by drying at 310° 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.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Samarium fluoride; SmF_3; [13765-24-7] (2) Alkyl ethers	Dressler, H. *Dissertationschrift.* Paed. Inst. Koethen. GDR. 1980.
VARIABLES:	**PREPARED BY:**
Room temperature	T. Mioduski and M. Salomon

EXPERIMENTAL VALUES:

solvent			SmF_3 solubility mass %	SmF_3 solubility mol/100g sln	solid phase Sm:F:solvent ratio
1-methoxydecane;	$C_{11}H_{24}O$;	[7289-52-3]	0.02	9.7×10^{-5}	1:3.02:0.06
1-(chloromethoxy) butane;	$C_5H_{11}ClO$;	[2351-69-1]	0.02	9.7×10^{-5}	1:3.00:0.16

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 Sm:F:H_2O ratio was 1:3.04:0.46.

No other information available.

ESTIMATED ERROR:

Nothing specified.

REFERENCES:

1. Kirmse, E.M. *Wiss. Hefte, Paed. Inst. Koethen.* 1978, *2*, 85.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Samarium fluoride; SmF_3; [13765-24-7] (2) Dimethylsulfoxide; C_2H_6OS; [67-68-5]	Kirmse, E.M. *Wiss. Hefte, Paed. Inst. Koethen* 1978, *2*, 85-90.
VARIABLES: Room temperature	**PREPARED BY:** T. Mioduski

EXPERIMENTAL VALUES:

The solubility of SmF_3 in $(CH_3)_2SO$ at room temperature was given as

0.04 mass %

The corresponding molality calculated by the compiler is

1.9×10^{-3} mol kg^{-1}

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

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
Isothermal method. About 100 mg of SmF_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 $Sm(OH)_3$ and a basic F^- solution. The precipitate was washed, dissolved in aq HCl, and Sm 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:
Sm_2O_3 (source and purity not specified) was dissolved in HCl and the fluoride precipitated by addition of aq HF. The solid produced was $SmF_3.0.5H_2O$ 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.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Samarium fluoride; SmF_3; [13765-24-7] (2) Pyridine; C_6H_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 SmF_3 in pyridine at room temperature was reported to be

0.10 mass %

The corresponding molality calculated by the compiler is

4.8×10^{-3} mol kg^{-1}

The solid phase was dried in a desiccator over P_4O_{11} and the Sm:F ratio found to equal almost 1:3.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

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

Sm_2O_3 (source and purity not specified) was dissolved in HCl and the fluoride precipitated by addition of aq HF. The solid produced was $SmF_3.0.5H_2O$ 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.; *Chemia Analityczna* 1975, *20*, 33.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Samarium fluoride; SmF_3; [13765-24-7] (2) Acidic nitrosyl fluoride; NOF.3HF; [14947-17-2]	Galkin, N.P.; Shishkov, Yu.D. Khomyakov, V.I. *Radiokhimiya* 1978, *20*, 136-41; *Soviet Radiochem.* (*Engl. Transl.*). 1978, *20*, 109-13.
VARIABLES:	PREPARED BY:
Room temperature	T. Mioduski

EXPERIMENTAL VALUES:

The solubility of SmF_3 in acidic nitrosyl fluoride at room temperature was reported to be

0.05 mass %

The molality calculated by the compiler is

2.4×10^{-3} mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Isothermal method employed. The solute-solvent mixture was placed in a Teflon vessel and mechanically agitated at room temperature for 10 h. The reaction mixture was allowed to settle for 24 h and the supernatant saturated solution was analyzed for the Sm content. An aliquot was evaporated to dryness under vacuum at 100-150°C, and the dry residue dissolved and analyzed (the method of analysis not specified). Presumably the solid phase is the anhydrous salt (compiler).	SmF_3 was at least 99% pure. NOF.3HF prepared by saturation of liquid HF with NOF, and was distilled twice at 95°C before use. The melting point of acidic nitrosyl fluoride was 3.8°C.
	ESTIMATED ERROR: Nothing specified.
	REFERENCES: