

COMPONENTS: (1) Dysprosium fluoride; DyF ₃ ; [13569-80-7] (2) Ethanol; C ₂ H ₆ O; [64-17-5]	ORIGINAL MEASUREMENTS: Kirmse, E.M. <i>Wiss. Hefte, Paed. Inst. Koethen</i> <u>1978, 2, 85-90.</u>
VARIABLES: Room Temperature	PREPARED BY: T. Mioduski
EXPERIMENTAL VALUES: <p>The solubility of DyF₃ in methanol at room temperature was reported to be</p> <p style="text-align: center;">0.015 mass %</p> <p>The corresponding molality calculated by the compiler is</p> <p style="text-align: center;">$6.8 \times 10^{-4} \text{ mol kg}^{-1}$</p> <p>The solid phase was dried in a desiccator over P₄O₁₀ and the Dy:F ratio found to equal almost 1:3.</p>	
AUXILIARY INFORMATION	
METHOD/APPARATUS/PROCEDURE: Isothermal method. About 100 mg of DyF 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 Dy(OH) ₃ and a basic F ⁻ solution. The precipitate was washed, dissolved in aq HCl, and Dy 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: Dy 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 DyF ₃ ·0.5H 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." ESTIMATED ERROR: Soly: results with relative errors exceeding 50% were rejected. Temp: unknown. REFERENCES: 1. Schilbach, U.; Kirmse, E.M. <i>Z. Chem.</i> <u>1974, 14, 484.</u> 2. Schilbach, U.; Hetze, I.; Kirmse, E.M. <i>Chemia Analytyczna</i> <u>1975, 20, 33.</u>

COMPONENTS: (1) Dysprosium fluoride; DyF ₃ ; [13569-80-7] (2) Alkyl ethers	ORIGINAL MEASUREMENTS: Dressler, H. <i>Dissertationschrift.</i> Paed. Inst. Koethen. GDR. <u>1980.</u>																				
VARIABLES: Room temperature	PREPARED BY: T. Mioduski and M. Salomon																				
EXPERIMENTAL VALUES: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">solvent</th> <th rowspan="2"></th> <th rowspan="2"></th> <th colspan="2">DyF₃ solubility</th> <th rowspan="2">solid phase Dy:F:solvent ratio</th> </tr> <tr> <th>mass %</th> <th>mol/100 g sln</th> </tr> </thead> <tbody> <tr> <td>1-methoxydecane;</td> <td>C₁₁H₂₄O;</td> <td>[7289-52-3]</td> <td>0.03</td> <td>1.37 x 10⁻⁴</td> <td>1:2.93:0.10</td> </tr> <tr> <td>1-(chloromethoxy)butane;</td> <td>C₅H₁₁ClO;</td> <td>[2351-69-1]</td> <td>0.01</td> <td>4.6 x 10⁻⁵</td> <td>1:2.81:0.11</td> </tr> </tbody> </table>		solvent			DyF ₃ solubility		solid phase Dy:F:solvent ratio	mass %	mol/100 g sln	1-methoxydecane;	C ₁₁ H ₂₄ O;	[7289-52-3]	0.03	1.37 x 10 ⁻⁴	1:2.93:0.10	1-(chloromethoxy)butane;	C ₅ H ₁₁ ClO;	[2351-69-1]	0.01	4.6 x 10 ⁻⁵	1:2.81:0.11
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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 Dy:F:H ₂ O ratio was 1:3.02:0.30. No other information available. ESTIMATED ERROR: Nothing specified. REFERENCES: 1. Kirmse, E.M. <i>Wiss. Hefte, Paed. Inst. Koethen.</i> <u>1978, 2, 85.</u>																				

COMPONENTS: (1) Dysprosium fluoride; DyF ₃ ; [13569-80-7] (2) Tributyl phosphate; C ₁₂ H ₂₇ O ₄ P; [126-73-8]	ORIGINAL MEASUREMENTS: Kirmse, E.M. <i>Wiss. Hefte, Paed. Inst. Koethen</i> <u>1978, 2, 85-90.</u>
VARIABLES: Room Temperature	PREPARED BY: T. Mioduski
EXPERIMENTAL VALUES: <p>The solubility of DyF₃ in [CH₃(CH₂)₃]₃P(O) at room temperature was given as</p> <p style="text-align: center;">0.01 mass %</p> <p>The corresponding molality calculated by the compiler is</p> <p style="text-align: center;">$4.6 \times 10^{-4} \text{ mol kg}^{-1}$</p> <p>The solid phase was dried in a desiccator over P₄O₁₀ and the Dy:F ratio determined to be almost 1:3.</p>	
AUXILIARY INFORMATION	
METHOD/APPARATUS/PROCEDURE: Isothermal method. About 100 mg of DyF 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 Dy(OH) ₃ and a basic F ⁻ solution. The precipitate was washed, dissolved in aq HCl, and Dy 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: Dy 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 DyF ₃ ·0.5H 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." ESTIMATED ERROR: Soly: results with relative errors exceeding 50% were rejected. Temp: unknown. REFERENCES: 1. Schilbach, U.; Kirmse, E.M. <i>Z. Chem.</i> <u>1974, 14, 484.</u> 2. Schilbach, U.; Hetze, I.; Kirmse, E.M. <i>Chemia Analytyczna</i> <u>1975, 20, 33.</u>

COMPONENTS: (1) Dysprosium fluoride; DyF ₃ ; [13569-80-7] (2) Dimethylsulfoxide; C ₂ H ₆ OS; [67-68-5]	ORIGINAL MEASUREMENTS: Kirmse, E.M. <i>Wiss. Heft, Paed. Inst. Koethen</i> <u>1978</u> , 2, 85-90.
VARIABLES: Room Temperature	PREPARED BY: T. Mioduski
EXPERIMENTAL VALUES: The solubility of DyF ₃ in (CH ₃) ₂ SO at room temperature was given as $0.01 \text{ mass } \%$ The corresponding molality calculated by the compiler is $4.6 \times 10^{-4} \text{ mol kg}^{-1}$ The solid phase was dried in a desiccator over P ₄ O ₁₀ and the Dy:F ratio found to be almost 1:3.	
AUXILIARY INFORMATION	
METHOD/APPARATUS/PROCEDURE: Isothermal method. About 100 mg of DyF 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 Dy(OH) ₃ and a basic F ⁻ solution. The precipitate was washed, dissolved in aq HCl, and Dy 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: Dy 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 DyF ₃ ·0.5H 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." ESTIMATED ERROR: Soly: results with relative errors exceeding 50% were rejected. Temp: nothing specified. REFERENCES: 1. Schilbach, U.; Kirmse, E.M. <i>Z. Chem.</i> <u>1974</u> , 14, 484. 2. Schilbach, U.; Hetze, I.; Kirmse, E.M. <i>Chemia Analityczna</i> <u>1975</u> , 20, 33.

COMPONENTS: (1) Dysprosium fluoride; DyF ₃ ; [13569-80-7] (2) Pyridine; C ₅ H ₅ N; [110-86-1]	ORIGINAL MEASUREMENTS: Kirmse, E.M. <i>Wiss. Hefte, Paed. Inst. Koethen</i> <u>1978, 2, 85-90.</u>
VARIABLES: Room Temperature	PREPARED BY: T. Mioduski
EXPERIMENTAL VALUES: The solubility of DyF ₃ in pyridine at room temperature was given as $0.03 \text{ mass } \%$ The corresponding molality calculated by the compiler is $1.4 \times 10^{-3} \text{ mol kg}^{-1}$ The solid phase was dried in a desiccator over P ₄ O ₁₀ and the Dy:F ratio determined to be almost 1:3.	
AUXILIARY INFORMATION	
METHOD/APPARATUS/PROCEDURE: Isothermal method. About 100 mg of DyF 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 Dy(OH) ₃ and a basic F ⁻ solution. The precipitate was washed, dissolved in aq HCl, and Dy 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: Dy 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 DyF ₃ ·0.5H 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." ESTIMATED ERROR: Soly: results with relative errors exceeding 50% were rejected. Temp: unknown. REFERENCES: 1. Schilbach, U.; Kirmse, E.M. <i>Z. Chem.</i> <u>1974, 14, 484.</u> 2. Schilbach, U.; Hetze, I.; Kirmse, E.M. <i>Chemia Analytyczna</i> <u>1975, 20, 33.</u>