COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Dysprosium iodide; DyI_3; [15474-63-2] (2) Ethanol; C_2H_6O; [64-17-5] (3) Water: H_2O; [7732-18-5]	Yastrebova, L.F.; Grigor, T.I.; Kuznetsova, C.P.; Stepin, B.D. *Zh. Neorg. Khim.* 1981, *26*, 2238-9; *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1981, *26*, 1203-4.
VARIABLES: Composition at 273 K	PREPARED BY: M. Salomon and T. Mioduski

EXPERIMENTAL VALUES:

	solubility at 0°C			
	$DyI_3.9H_2O$	DyI_3[a]		
solvent	mass %	mass %	mol kg^{-1}	solid phase
C_2H_5OH[b]	79.81	61.46	2.936	$DyI_3.9H_2O$
H_2O	88.86	68.43	3.991	"

[a]Results for the anhydrous salt calculated by the compilers.

[b]Authors' original results reported in terms of the solubility of the nonohydrate in the pure alcohol. Accounting for the waters of hydration, the compilers calculate that at equilibrium, the solvent contains 52.39 mass % alcohol and 47.61 mass % water.

COMMENTS AND/OR ADDITIONAL DATA:

In several instances in investigating the ternary systems, the initial nonohydrate was dehydrated in vacuum (3-4 mm Hg) at 30-40°C. Under these conditions the hexahydrate was produced after 40 hours. Howdver the authors state that in every instance the solid phase in the equilibrated solutions is the nonohydrate.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Isothermal method used. No information was given on how equilibrium was ascertained. Aliquots of saturated solution were withdrawn and analyzed for the metal complexometrically, for iodide by a potentiometric volumetric argentometric method, and for water by the Karl Fischer method. The alcohol and water contents in the mixtures[c] were found by quantitative gas chromatography. Solid phase compositions were determined by Schreinemakers' method of residues.[c]	The nonohydrate, $DyI_3.9H_2O$, was synthesized according to (1,2). The alcohol was dried and purified by "recommended" methods. The source and purity of water was not specified.
[c]These statements indicate that the authors studied the ternary system over a wide range of compositions. However no phase diagram was given, and the only numerical results reported are those given in the data table above. The phase diagram is stated to be similar to that for the NdI_3-H_2O-C_4H_9OH system (see the compilation for this system).	ESTIMATED ERROR: Nothing specified.

REFERENCES:

1. Yakimova, Z.P.; Kuznetsova, G.P.; Ya Yastrebova, L.F.; Stepin, B.D. *Zh. Neorg. Khim.* 1977, *22*, 251.
2. Belousova, A.P.; Kuznetsova, G.P.; Rukk, N.S.; Stepin, B.D. *Zh. Neorg. Khim.* 1979, *24*, 1410.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Dysprosium iodide; DyI_3; [15474-63-2] (2) 1-Butanol; $C_4H_{10}O$; [71-36-3] (3) Water; H_2O; [7732-18-5]	Yastrebova, L.F.; Grigor, T.I.; Kuznetsova, G.P.; Stepin, B.D. *Zh. Neorg. Khim.* 1981, 26, 2238-9; *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1981, 26, 1203-4.
VARIABLES: Composition at 273 K	PREPARED BY: T. Mioduski and M. Salomon

EXPERIMENTAL VALUES:

solubility at 0°C

	$DyI_3.9H_2O$	DyI_3[a]		
solvent[b]	mass %	mass %	mol kg^{-1}	solid phase
n-C_4H_9OH	62.53	48.16	1.710	$DyI_3.9H_2O$
H_2O	88.86	68.43	3.991	"

[a]Results for the anhydrous salt calculated by the compilers.

[b]Authors' original results reported in terms of the solubility of the nonohydrate in the pure alcohol. Accounting for the waters of hydration, the compilers calculate that at equilibrium the solvent contains 72.27 mass % alcohol and 27.73 mass % water.

COMMENTS AND/OR ADDITIONAL DATA:

In several instances in investigating the tenary systems, the initial nonohydrate was dehydrated in vacuum (3-4 mm Hg) at 30-40°C. Under these conditions, the hexahydrate was produced after 40 hours. However the authors state that in every instance the solid phase in the equilibrated solutions is the nonohydrate.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Isothermal method used. No information was given on how equilibrium was ascertained. Aliquots of saturated solution were withdrawn and analyzed for the metal complexometrically, for iodide by a potentiometric volumetric argentometric method, and for water by the Karl Fischer method. The alcohol and water contents in the mixtures[c] were found by quantitative gas chromatography. Solid phase compositions were determined by Schreinemakers' method of resudies.[c]	The nonohydrate, $DyI_3.9H_2O$, was synthesized according to (1,2). The alcohol was dried and purified by "recommended" methods. The source and purity of water was not specified.
[c]These statements indicate that the authors studied the ternary system over a wide range of compositions. However no phase diagram was given, and the only numerical results reported are those given in the data table above. The phase diagram is stated to be similar to that for the NdI_3 - H_2O - C_4H_9OH system (see the compilation for this system).	ESTIMATED ERROR: Nothing specified.

REFERENCES:

1. Yakimova, Z.P.; Kuznetsova, G.P.; Yastrebova, L.F. Stepin, B.D. *Zh. Neorg. Khim.* 1977, 22, 251.
2. Belousova, A.P.; Kuznetsova, G.P.; Rukk, N.S.; Stepin, B.D. *Zh. Neorg. Khim.* 1979, 24, 1410.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Dysprosium iodide; DyI_3; [15474-63-2] (2) Tetrahydrofuran; C_4H_8O; [109-99-9]	Kachkimbaeva, S.A.; Chalova, E.P.; Bleshinskii, S.V. *Khim. Kompleks. Soedin. Redk. Soputstvuyushchikh Elem.* 1970, 122-6.
VARIABLES: T/K = 293	**PREPARED BY:** T. Mioduski

EXPERIMENTAL VALUES:

The solubility of DyI_3 in tetrahydrofuran at 20°C was reported to be

$$3.553 \text{ g dm}^{-3}$$

$$(0.00654 \text{ mol dm}^{-3}, \text{ compiler})$$

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
The solute-solvent mixtures were equilibrated isothermally by agitation. The phases were separated by decantation, and in some cases by centrifuging. Dy determined by the oxalate method. I determined by titration with an $AgNO_3$ solution (the Volhard method).	DyI_3 prepared by heating cp grade iodine with excess powered metal (Dy-O-Sort) in an ampoule at 1200°C. The iodide formed sublimated from the hot to the cold part of the ampoule. The product was analyzed for Dy and I contents. DyI_3 contained DyI_2 as found by titration with an iodine solution, and the I/Dy ratio was 2.78. C.p. grade tetrahydrofuran, (GDR) b.p. = 65.6°C, dried with NaOH and Na, and then distilled from metallic sodium.
	ESTIMATED ERROR: Nothing specified.
	REFERENCES: