			Gamanan			
COMPONENTS:		<u> </u>		ORIGINAL MEASUREMENTS:		
(1) Samari [10361	um chlorid -82-7]	e; SmCl ₃ ;		Shevtsova, Z.N.; Korshunov, B.G.; Safonov, V.V.; Kogan, L.M.; Gudkova, V.I.		
(2) Hexachloro-1,3-butadiene; C ₄ Cl ₆ ; [87-68-3]			Zh. Neorg. Khim. <u>1968</u> , 13, 3096-9: Russ. J. Inorg. Chem. (Engl. Transl.) <u>1968</u> , 13, 1596-8.			
VARIABLES:			PREPARED BY:			
Temperature			T. Mioduski and M. Salomon			
EXPERIMENTAL VALUES:					<u> </u>	
Composition, densities, viscosities and refra			active indices	s of satura	ted solutions.	
	solub	ility ^a				
t/°C	mass %	mol kg ⁻¹	d/g cm ⁻³	η/Ρ	n ²⁰ D	nature of the solid phase
25	0.024	0.0093 ₅	1.6875	0.0386	1,5552	SmC1 ₃ .3.5H ₂ 0
50	0.035	0.00136	1.649	0.0311	1.5557	SmC1 ₃ .3.5H ₂ 0
75	0.054	0.00210	1.613	0.0249	1.5548	SmC13.3.5H20
		·····				
			AUXILIARY	INFORMATION		
AUXILIARY METHOD/APPARATUS/PROCEDURE: Isothermal method used. Depending on temp, equil was established after 12 d at 25°C, 10 d at 50°C, and 7 d at 75°C. Chloride was detd by the Volhard method, and samarium detd gravimetrically by precipita- ting as the oxalate and igniting to the oxide. Samarium was also detd by titration with Trilon B with Xylene Orange indicator. The composition of the solid phase was established by chemical analysis, and con- firmed by X-ray analysis. Samples of the solid phases were also studied thermographically after removal of excess solvent by washing with absolute ethyl ether which is claimed not to change the composition of hydrate. At 120°C, partial hydrolysis takes place with formation of SmOC1.			SOURCE AND PI SmC1 ₃ .6H ₂ O p evaporating ized and dr: pure, conta: rare earth to 0.05%), and hexahydrate units): Sm 4 Purified sol the followin and n _D ²⁰ = 1. ESTIMATED ER Soly: nothin Temp: accura REFERENCES:	URITY OF MAT prepd by dia and cooling ied in a dea ined oxide : metals, Fe Cu (0.01%) gave the fo 41.51; Cl 20 lvent (methon g propertion .5543. ROR: ng specified acy ± 0.1 K	TERIALS: solving Sm203 in HCl, g, and then recrystal- siccator. Sm203, 99.6% impurities of other (0.01%), Ca (0.01- . Analysis of the bilowing (in mass % 8.90; H ₂ 0 29.59. bd not specified) had es: $d_4^{20} = 1.6807$ g/ml, 4. (authors).	
			İ			

COMPO	NENTS:	ORIGINAL MEASUREMENTS:
(1)	Samarium chloride; SmCl ₃ ; [10361-82-7]	Merbach, A.; Pitteloud, M.N.; Jaccard, P. Helv. Chím. Acta <u>1972</u> , 55, 44-52.
(2)	Methanol; CH ₄ 0; [67-56-1]	Pitteloud, M.N. These. Faculte des Sciences de l'Universite de Lausanne. <u>1971</u> .
VARIA	BLES :	PREPARED BY:
т/к	= 298.2	T. Mioduski and M. Salomon
EXPER	IMENTAL VALUES:	
		mean solubilities/mol kg ⁻¹
	t/ ^o C	a b
	25	3.33 3.37
a.	Initial salt is the adduct SmCl ₃ .4CH ₃ OH found to be SmCl ₃ .4CH ₃ OH.	. Equilibrated solid phase analyzed and
b.	Solutions equilibrated with anhydrous S analyzed, but assumed by the compilers	mCl ₃ . Equilibrated solid phases not to be SmCl ₃ .4CH ₃ OH.
	AUXILIARY	INFORMATION
METHO Isoth were longe box. (NH ₄) tropi Chlor titra of th NMR a	D/APPARATUS/PROCEDURE: nermal method as in (1,2). Mixtures equilibrated for at least 4 days. Pro- ed operations were performed in a dry Samarium determined by titration with 3H(EDTA) using a small amount of uro- ine buffer and Xylenol Orange indicator. with was determined by potentiometric ation with AgNO ₃ solution. Composition we adduct SmCl ₃ .4CH ₃ OH confirmed by ¹ H and X-ray diffraction.	SOURCE AND PURITY OF MATERIALS: Sm203 of at least 99.9% purity dissolved in HCI to produce the hexahydrate. The salt was dehydrated as described in (3). The adduct SmCl3.4CH3OH prepared by dissolving the hydrate in a small excess of o-methyl- formate followed by distillation and crys- tallization from methanol. Methanol was purified and dried by the Vogel method.
of 2-	reported solubilities are mean values 4 determinations.	ESTIMATED ERROR:
COMME	ENTS AND/OR ADDITIONAL DATA:	Soly: precision $\pm 0.5\%$ as in (1) (compilers).
Refer sourc 7, 22 J. H. bes t treat ence	Tence (3) was incorrectly cited in the the paper as: J. Inorg. Nucl. Chem. <u>1958</u> , 44 (this is the reference to a paper by Freeman and M. L. Smith which descri- the preparation of anhydrous salts by ment with thionyl chloride). Refer- (3) was corrected by the compilers.	 Temp: precision probably at least ± 0.05 K as in (1) (compilers). REFERENCES: 1. Brunisholz, F.; Quinche, J.P.; Kalo, A.M. Helv. Chim. Acta 1964, 47, 14. 2. Flatt, R. Chimia 1952, 6, 62. 3. Taylor, M.D.; Carter, C.P. J. Inorg. Nucl Chem. 1962, 24, 387 (see COMMENTS at left)

COMPONENTS :	ORIGINAL MEASUREMENTS:
<pre>(1) Samarium chloride; SmCl₃; [10361-82-7]</pre>	Merbach, A.; Pitteloud, M.N.; Jaccard, P. Helv. Chim. Acta <u>1972</u> , 55, 44-52.
(2) Ethanol; C ₂ H ₆ 0; [64-17-5]	Pitteloud, M.N. These. Faculte des Sciences de l'Universite de Lausanne. <u>1971</u> .
VARIABLES:	PREPARED BY:
T/K = 298.2	T. Mioduski and M. Salomon
EXPERIMENTAL VALUES:	
	mean solubilities/mol kg ⁻¹
t/ ^o C	a b
25	1.97 2.03
a. Initial salt is the adduct SmCl ₃ .3C ₂ H ₅ OI found to be SmCl ₃ .3C ₂ H ₅ OH.	I. Equilibrated solid phase analyzed and
b. Solutions equilibrated with anhydrous Sr analyzed, but assumed by the compilers t	nCl ₃ . Equilibrated solid phases not to be SmCl3.3C ₂ H ₅ OH.
AUXILIARY	INFORMATION
METHOD/APPARATUS/PROCEDURE: Isothermal method as in (1,2). Mixtures were equilibrated for at least 4 days. Pro- longed operations were performed in a dry box. Samarium determined by titration with (NH4) ₃ H(EDTA) using a small amount of uro- tropine buffer and Xylenol Orange indicator. Chloride was determined by potentiometric titration with AgNO ₃ solution. Composition of the adduct SmCl ₃ .3C ₂ H ₅ O confirmed by ¹ H NMR and X-ray diffraction. The reported solubilities are mean values	SOURCE AND PURITY OF MATERIALS: Sm203 of at least 99.9% purity dissolved in HCl to produce the hexahydrate. The salt was dehydrated as in (3). The adduct SmC13.3C2H60 prepared by dissolving the hydrate in a small excess of o-ethylformate followed by distillation and crystalliza- tion from ethanol. Ethanol (Fluka) was used as received. Purity and absence of water was confirmed by NMR method.
of 2-4 determinations.	ESTIMATED ERROR: Soly: precision + 0.5% as in (1) (compilers).
COMMENTS AND/OR ADDITIONAL DATA: Reference (3) was incorrectly cited in the source paper as: J. Inorg. Nucl. Chem. 1958.	Temp: precision probably at least ± 0.05K as in (1) (compilers).
7, 224 (this is the reference to a paper by J. H. Freeman and M. L. Smith which descri- bes the preparation of anhydrous salts by treatment with thionyl chloride). Reference (3) was corrected by the compilers.	 REFERENCES: 1. Brunisholz, F.; Quinche, J.P.; Kalo, A.M. Helv. Chim. Acta <u>1964</u>, 47, 14. 2. Flatt, R. Chimia <u>1952</u>, 6, 62. 3. Taylor, M.D.; Carter, C.P. J. Inorg. Nucl Chem. <u>1962</u>, 24, 387 (see COMMENTS at left).

COMPONENTE				ORTGINAL MEASUREMENTS .			
(1) Samari [1036]	ium chloride; S L-82-7]	mCl ₃ ;		Sakharova, N.N.; Sakharova, Yu.G.; Ezhova, T.A.; Izmailova, A.A.			
(2) Ethand	(2) Ethano1; C_2H_60 ; [64-17-5] (3) Water: Ho0: [7732-18-5]			Zh. Neorg. Khim. <u>1975</u> , 20, 1479-83; Russ. J. Inorg. Chem. [Engl. Transl.] <u>1975</u> , 20,			
(5) Water;	H ₂ U; [7732-1	[[-0]					
VARIABLES:				PREPARED) BY:	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	
Temperature			T. Miod	luski and M.	Salomon		
EXPERIMENTAL	VALUES:			L	.a		
{	solubility of	SmC1 ₃ .6H ₂ 0 in	96.8	% С ₂ н ₅ он	- ,		
{	sample 1	sample 2	samp	le 3	sample 4	mean solub	ilities
t/°C	g/100 g ⁰	g/100 g	g/10	0 g	g/100 g	g/100 g	mol kg
20	28.97	28.89	29.2	9	28.87	29.00	1.195
30	29.49	29.66	29.5	9	29.63	29.59	1.152
40	30.42	30.47	30.6	1	30.75	30.56	1.206
50	31.93	31.96	31.8	3	31.88	31.90	1.284
60	34.82	34.58	34.7	9	34.65	34.73	1.458
^a It is not	clearly stated	whether the m	ixtur	e is 96.8	mass % or 9	6.8 volume %	ethanol.
	les reported as	grams of hexa	hydra	te in 100) g of solven	t.	
	tea reportea as				Ū		
Molalities	s calculated by	the compilers	•				
]							
[
		AUXII	LIARY	INFORMAT	ION		
METHOD/APPAR	RATUS/PROCEDURE	:		SOURCE A	ND PURITY OF	MATERIALS:	
Isothermal	method used.	Equilibrium wa	s ob-	SmC13.6	H_20 prepd by n dil (1:3)	dissolving c HCl followed	.p. grade
tained by a	approaching equ	ilibrium from	00	crystn.	The crysta	ls were dried	in a desic-
above and h	elow. Two of	the data point	s in utli-	cator c	ver CaCl ₂ , P	2 ⁰ 5, and NaOH. he metal by t	The crys-
bration, an	nd the remaining	ig two data poi	nts	Trilon	B, and for C	1 by the Volh	ard method.
were obtain	ned after 4 h o	f equilibratio	n.	Found (Found (<pre>(%) for Sm: 4 (%) for Cl: 2</pre>	1.38, 41.25 (9.10, 29.15 (calcd 41.21). calcd 29.18).
The metal of	content in each	aliquot taken	for	96.8% e	thanol prepd	by prolonged	boiling of
analysis wa titration w	as determined b with Trilon B.	y complexometr	ic	c.p. gr followe refract	ed by distn. cometrically	Ethanol with an Ethanol conc and pycnometr	nydr CuSO4 n determined ically.
Analyses of 40°C and 60	E the solids wi)°C showed the	thdrawn at 20° solid phase to	C, be	ESTIMATE	D ERROR:	antly presign	to within
the hexahyd in any of t	lrate: i.e. eth the solid phase	anol was not f s.	ound	±	0.8% (compi	lers).	co wienin
The hexabyd	irate melted at	145.5 - 146°C	•	Temp: n	othing speci	fied.	
				REFERENC	CES:		
L							

COMPONENTS: (1) Samarium chloride; SmCl ₃ ; [10361-82-7]	ORIGINAL MEASUREMENTS: Merbach, A.; Pitteloud, M.N.; Jaccard, P. Helv. Chim. Acta <u>1972</u> , 55, 44-52.
(2) 2-Propanol; C ₃ H ₈ 0; [67-63-0]	Pitteloud, M.N. <i>These</i> . Faculte des Sciences de l'Universite de Lausanne. <u>1971</u> ,
VARIABLES :	PREPARED BY:
T/K = 298.2	T. Mioduski and M. Salomon
EXPERIMENTAL VALUES:	
t/ ^o C	mean solubilities/mol kg ⁻¹
t/ ^o C	a b
25	0.23 0.23
a. Initial salt is the adduct SmCl ₃ .3C ₃ H ₇ O found to be SmCl ₃ .3C ₃ H ₇ OH.	H. Equilibrated solid phase analyzed and
b. Solutions equilibrated with anhydrous S analyzed, but assumed by the compilers	mCl ₃ . Equilibrated solid phases not to be SmCl ₃ .3C ₃ H ₇ OH.
AUXILIARY	INFORMATION
	COUNCE AND DUDITY OF MATERIALS.
Isothermal method as in $(1,2)$. Mixtures were equilibrated for at least 4 days. Pro- longed operations were performed in a dry box. Samarium determined by titration with $(NH_4)_3$ (EDTA) using a small amount of uro- tropine buffer and Xylenol Orange indicator. Chloride was determined by potentiometric titration with AgNO ₃ solution. Composition of the adduct SmCl ₃ .3C ₃ H ₈ O confirmed by	Source and Fourier of Farekins: Sm ₂ O ₃ of at least 99.9% purity dissolved in HCl to produce the hexahydrate. The salt was dehydrated as in (3). The adduct SmCl ₃ .3C ₃ Hg0 prepared by dissolving the hydrate in a small excess of o-methylformate followed by distillation and trans-solvation of the methanol complex with 2-propanol. Iso-propanol (Fluka) was used as received.
The reported solubilities are mean values of $2-4$ determinations.	by NMR.
	ESTIMATED EKKOK: Soly: precision \pm 0.5% as in (1) (compilers).
COMMENTS AND/OR ADDITIONAL DATA: Reference (3) was incorrectly cited in the	Temp: precision probably at least \pm 0.05K as in (1) (compilers).
source paper as: J. Inorg. Nucl. Chem. <u>1958</u> , 7, 224 (this is the reference to a paper by J.H. Freeman and M.L. Smith which describes the preparation of anhydrous salts by treatment with thionyl chloride). Reference (3) was corrected by the compilers.	 REFERENCES: 1. Brunisholz, F.; Quinche, J.P.; Kalo, A.M. Helv. Chim. Acta <u>1964</u>, 47, 14. 2. Flatt, R. Chimia <u>1952</u>, 6, 62. 3. Taylor, M.D.; Carter, C.P. J. Inorg. Nucl. Chem. <u>1962</u>, 24, 387 (see COMMENTS at left).

COMPONENTS:			ORIGI	ORIGINAL MEASUREMENTS:		
(1) Samarium chl [10361-82-7]	oride; SmCl	L ₃ ;	Kirm	Kirmse, E.M.		
(2) Alcohols			<u>1971</u>	, 200-6.	. po Teor. Kastvorov	
VARIABLES:			PREPAR	RED BY:		
T/K = 298			т. м	ioduski and M	. Salomon	
EXPERIMENTAL VALUES	:					
			SmCl ₃ so	lubility ^a	nature of the	
solvent			mass %	mol kg ⁻¹	solid phase	
1,2-ethanediol;	^{C2^H6⁰2;}	[107-21-1]	32.9	1.91	SmCl ₃ .3C ₂ H ₆ 0 ₂	
1-propano1;	с _{3^н8} 0;	[71-23-8]	30.5	1.71	SmCl ₃ .C ₃ H ₈ 0	
2-propen-1-o1 ^b ;	с _{3^н6} 0;	[107-18-6]	38.0	2.39	SmCl ₃ .C ₃ H ₆ 0	
		AUXILIA	RY INFORM	ATION		
AUXILIARY METHOD/APPARATUS/PROCEDURE: Only the nature of the solid phase was reported. Experimental details not given, but were probably similar to previous works of the author which are compiled throughout this volume.			SOURCE Noth: work by probaut and (ESTIMA Noth: REFERI 1. Ta J.	AND PURITY O Ing specified by the author ably prepared Carter (1). NTED ERROR: Ing specified ENCES: sylor, M.D.; C Inorg. Nucl.	F MATERIALS: , but based on previous r the anhydrous salt was by the method of Taylor Carter, C.P. Chem. <u>1962</u> , 24, 387.	

(1) Samar:			IURIGINAL MEA			
(I) Samar.	(1) Samarium chloride; SmCl.;			McCarty, C.N.		
[10361-82-7]			Master of Science Thesis. The University			
[±050.	1-02-7]		of Illinois. Urbana, IL, USA. <u>1933</u> : this work was also cited by			
(2) 2-Mat1	horvethanol (methyl cellosolve).				
C_H_O	: [109-86-4		Honkins, B.	S.: Audrieth, L.F.		
~3~8~3	2, 120, 00	,	Trans. Electrochem. Soc. 1934. 66. 134-42.			
				<u></u> , co, <u></u> ,		
VARIABLES:			DEEDADEN BV.			
Temperature: T/K = 273 - 323		M. Salomon and T. Mioduski				
					EXPERIMENTA	L VALUES:
		Composition of Sat	urated Solut	ions		
		Sm_0. ^a	SmC1 b	SmC1 b		
		2°3	54013	3		
	t/ ^o C	g/25 cc	g/dm ³	mol/dm ³		
		-	0			
	n	0.2873	16.92	0.0659		
	10	0.5210	30.68	0.1195		
	20	0.7238	10.00	0.1440		
	20	1 0236	42.02	0.2368		
	40	1 2827	75 54	0.2040		
		1 //15	8/ 20	0.2306		
	20	1.4415	04.09	0.3300		
Apparently	/ these are a	verage values of at le	ast two anal	yses from a given bottle.		
THE AUCHOI	. uru not ind	icace whecher chere we	te any diffe	itences in resurce using omorg		
trom prepa	arations I an	d 2.				
b Recalculat	ed by the co	mnilers using 1977 THP	AC recommend	ed atomic weights.		
NCCUITCUIU.		mpirore during 1977 for		ed acomic weighto.		
		Equilibrated solid	phase not a	nalvzed.		
		Equilibrated solid	phase not a	nalyzed.		
		Equilibrated solid	phase not a	nalyzed.		
		Equilibrated solid	phase not a	nalyzed.		
		Equilibrated solid	phase not a	nalyzed.		
		Equilibrated solid	phase not a	nalyzed.		
ME THOD / AP P A	RATUS / PROCED	Equilibrated solid	phase not a INFORMATION	nalyzed.		
METHOD/APP#	NRATUS/PROCED	Equilibrated solid AUXILIARY URE: ut 75-100 cc of sol-	phase not a INFORMATION SOURCE AND Commercial	nalyzed. PURITY OF MATERIALS: solvent was permitted to stand		
METHOD/APPA sothermal	ARATUS/PROCED method. Abo	Equilibrated solid AUXILIARY URE: ut 75-100 cc of sol- placed in bottles and	phase not a INFORMATION SOURCE AND Commercial over CaO fo	nalyzed. PURITY OF MATERIALS: solvent was permitted to stand r at least 1 week and then digti		
METHOD/APPA Sothermal Yent + exce	RATUS/PROCED method. Abo ess salt were a thermosta	Equilibrated solid AUXILIARY URE: ut 75-100 cc of sol- placed in bottles and t for at least 12 b.	phase not a INFORMATION SOURCE AND Commercial over CaO fo led. A mid	nalyzed. PURITY OF MATERIALS: solvent was permitted to stand r at least 1 week and then disti dle portion (fraction pot speci-		
METHOD/APPA sothermal rent + exce gitated in ce + vater	ARATUS/PROCED method. Abo ss salt were a thermosta was used fo	Equilibrated solid AUXILIARY URE: ut 75-100 cc of sol- placed in bottles and t for at least 12 h. r the OSC measurements	phase not a INFORMATION SOURCE AND Commercial over CaO fo led. A mid fied) was	nalyzed. PURITY OF MATERIALS: solvent was permitted to stand r at least 1 week and then disti dle portion (fraction not speci- etained and stored in a storpar		
METHOD/APPA sothermal yent + exce gitated in ice + water	ARATUS/PROCED method. Abo ess salt were a thermosta was used fo	Equilibrated solid AUXILIARY URE: ut 75-100 cc of sol- placed in bottles and t for at least 12 h. r the 0°C measurements, with ground glace	phase not a INFORMATION SOURCE AND Commercial over CaO fo led. A mid fied) was r	PURITY OF MATERIALS: solvent was permitted to stand r at least 1 week and then disti dle portion (fraction not speci- etained and stored in a stopper 1239C Sm colto proved in 1025		
METHOD/APPA sothermal rent + exce ugitated in ce + water The bottles	RATUS/PROCED method. Abo ess salt were a thermosta was used fo s were fitted	Equilibrated solid AUXILIARY URE: ut 75-100 cc of sol- placed in bottles and t for at least 12 h. r the 0°C measurements. with ground glass	phase not a INFORMATION SOURCE AND Commercial over CaO fo led. A mid fied) was r flask: b.p.	PURITY OF MATERIALS: solvent was permitted to stand r at least 1 week and then disti dle portion (fraction not speci- etained and stored in a stoppere 123°C. Sm salts prepd in 1925		
METHOD/APPA sothermal yent + exce gitated in ce + water The bottles toppers an	RATUS/PROCED method. Abo ss salt were a thermosta was used fo were fitted d were seale	Equilibrated solid AUXILIARY URE: ut 75-100 cc of sol- placed in bottles and t for at least 12 h. r the 0°C measurements. with ground glass d from the atmosphere	phase not a INFORMATION SOURCE AND Commercial over Ca0 fo led. A mid fied) was r flask: b.p. double ammo	PURITY OF MATERIALS: solvent was permitted to stand r at least 1 week and then disti dle portion (fraction not speci- etained and stored in a stopper 123°C. Sm salts prepd in 1925 nium nitrates were of "spectro-		
METHOD/APPA Isothermal vent + exce agitated in Ice + water The bottles stoppers an by placing	ARATUS/PROCED method. Abo ess salt were a thermosta was used fo were fitted d were seale gum rubber t	Equilibrated solid AUXILIARY URE: ut 75-100 cc of sol- placed in bottles and t for at least 12 h. r the 0°C measurements. with ground glass d from the atmosphere ubing over the stop-	phase not a INFORMATION SOURCE AND Commercial over CaO fo led. A mid fied) was r flask: b.p. double ammo scopic puri	PURITY OF MATERIALS: solvent was permitted to stand r at least 1 week and then disti dle portion (fraction not speci- etained and stored in a stopper 123°C. Sm salts prepd in 1925 nium nitrates were of "spectro- ty" and converted to the oxide (
METHOD/APPA sothermal rent + exce agitated in Ice + water The bottles stoppers an py placing pers and ne	ARATUS/PROCED method. Abo ss salt were a a thermosta was used fo s were fitted d were seale gum rubber to cks of the b	Equilibrated solid AUXILIARY URE: ut 75-100 cc of sol- placed in bottles and t for at least 12 h. r the 0°C measurements with ground glass d from the atmosphere ubing over the stop- ottles, and a rubber	phase not a INFORMATION SOURCE AND Commercial over CaO fo led. A mid fied) was r flask: b.p. double ammo scopic puri details) an	PURITY OF MATERIALS: solvent was permitted to stand r at least 1 week and then dist dle portion (fraction not speci- etained and stored in a stopper 123°C. Sm salts prepd in 1925 nium nitrates were of "spectro- ty" and converted to the oxide (d the anhydr chloride prepd by t		
METHOD/APPA sothermal yent + exce gitated in Ice + water The bottles stoppers an y placing pers and ne pung was fi	ARATUS/PROCED method. Abo ess salt were a thermosta was used fo s were fitted id were seale gum rubber t cks of the b tted into the	Equilibrated solid AUXILIARY URE: ut 75-100 cc of sol- placed in bottles and t for at least 12 h. r the 0°C measurements, with ground glass d from the atmosphere ubing over the stop- ottles, and a rubber e upper end of the	phase not a INFORMATION SOURCE AND Commercial over CaO fo led. A mid fied) was r flask: b.p. double ammo scopic puri details) an methods. 1	PURITY OF MATERIALS: solvent was permitted to stand r at least 1 week and then disti dle portion (fraction not speci- etained and stored in a stopper 123°C. Sm salts prepd in 1925 nium nitrates were of "spectro- ty" and converted to the oxide (d the anhydr chloride prepd by t . The oxide was dissolved in ac		
METHOD/APPA Sothermal Yent + exce agitated in Ice + water The bottles Stoppers and by placing pers and ne bung was fi Subing. Af	RATUS/PROCED method. Abo ess salt were a thermosta was used fo swere fitted id were seale gum rubber ti cks of the b tted into th ter equilibra	Equilibrated solid AUXILIARY URE: ut 75-100 cc of sol- placed in bottles and t for at least 12 h. r the 0°C measurements. with ground glass d from the atmosphere ubing over the stop- ottles, and a rubber e upper end of the ation, the solutions	phase not a INFORMATION SOURCE AND Commercial over CaO fo led. A mid fied) was r flask: b.p. double ammo scopic puri details) an methods. 1 HC1 and the	PURITY OF MATERIALS: solvent was permitted to stand r at least 1 week and then distidle portion (fraction not speci- etained and stored in a stoppere 123°C. Sm salts prepd in 1925 nium nitrates were of "spectro- ty" and converted to the oxide (d the anhydr chloride prepd by t . The oxide was dissolved in aq excess HC1 evapd. The crystal-		
METHOD/APPA Sothermal Yent + exce agitated in Ice + water The bottles stoppers and y placing bers and ne yers and ne yeng was fi Jubing. Aff Yere allowe	RATUS/PROCED method. Abo ess salt were a thermosta was used fo were fitted d were seale gum rubber to tecks of the b tted into th ter equilibr.	Equilibrated solid AUXILIARY URE: ut 75-100 cc of sol- placed in bottles and t for at least 12 h. r the 0°C measurements. with ground glass d from the atmosphere ubing over the stop- ottles, and a rubber e upper end of the ation, the solutions for at least 12 h, and	phase not a INFORMATION SOURCE AND Commercial over Ca0 fo led. A mid fied) was r flask: b.p. double ammo scopic puri details) an methods. 1 HCl and the lized salt	PURITY OF MATERIALS: solvent was permitted to stand r at least 1 week and then disti dle portion (fraction not speci- etained and stored in a stopper 123°C. Sm salts prepd in 1925 nium nitrates were of "spectro- ty" and converted to the oxide (d the anhydr chloride prepd by t . The oxide was dissolved in ac excess HCl evapd. The crystal- was dehydrated by heating in the		
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METHOD/APPA Isothermal vent + exce agitated in lce + water The bottles stoppers and ne y placing bers and ne y placing ders and ne stong was fi ubing. Af rere allowe ising a cal vere remove avaporated ind pptd as icid. The list water ishe oxide. ioluble in STIMATED E Soly: prec (com Temp: prec	ARATUS/PROCED method. Abo as salt were a thermosta was used fo swere fitted d were seale gum rubber to tecks of the b. tted into the ter equilibre d to settle librated 25 c d for analys to dryness as the oxalate samples were and ignited The oxide we the organic i RROR: ision probabl pilers). ision ± 0.2 F	Equilibrated solid AUXILIARY URE: ut 75-100 cc of sol- placed in bottles and t for at least 12 h. r the 0°C measurements, with ground glass d from the atmosphere ubing over the stop- ottles, and a rubber e upper end of the ation, the solutions for at least 12 h, and c pipet, two samples is. The samples were nd dissolved in aq HC1 by addn of oxalic filtered, washed with to constant weight as as found to be in- solvent. Ly within 3 % X (author).	phase not a INFORMATION SOURCE AND Commercial over Ca0 fo led. A mid fied) was r flask: b.p. double ammo scopic puri details) an methods. 1 HCl and the lized salt presence of al h, then a benzoate wa nitrate wit ate dehydra least 24 h. carried out sulting chl stream of di salt was sto Dry HCl was passing the drying towe	PURITY OF MATERIALS: solvent was permitted to stand r at least 1 week and then disti dle portion (fraction not speci- etained and stored in a stoppere 123°C. Sm salts prepd in 1925 nium nitrates were of "spectro- ty" and converted to the oxide (d the anhydr chloride prepd by t . The oxide was dissolved in aq excess HCl evapd. The crystal- was dehydrated by heating in the dry HCl first at 100°C for seve at 200°C. 2. The rare earth s ptd from the aq chloride or h sodium benzoate, and the benzo ted by heating to 110°C for at Extraction of the chloride was with HCl satd ether, and the re- oride heated at 60°C first in a ry HCl and then in dry air. The ored in a desiccator over P205. prepd from NaCl + H2S04 and by resulting HCl through H2S04 rs.		

COMPONENTS:	ORIGINAL MEASUREMENTS:		
(1) Samarium chloride: SmCla:	McCarty, C.N.		
[10361_82_7]	Master of Science Thesis. The University		
[10301-04-1]	of Illinois. Urbana, TL. USA, 1933, this		
(2) 0 The mathematication (ather 1 and 1	work is also sited by		
(2) 2-Ethoxyethanol (ethyl ceriosolve);	WOLK IS ALSO CICED BY		
$C_4H_{10}O_2; [110-80-5]$	Hopkins, B.S.; Audrieth, L.F.		
	Trans. Electrochem. Soc. 1934 66 135-42		
	<u>1334</u> ; 00; 133 42:		
VARIABLES:	PREPARED BY:		
Temperature: $T/K = 273 - 323$	M. Salomon and T. Mioduski		
EXPERIMENTAL VALUES:			
Composition of	Saturated Solutions		
	L 1		
Sm ₂ 0 ^a	SmCl ₂ ^D SmCl ₂ ^D		
2 3	3 3		
+/°c 9/25 cc	g/dm^3 mol/dm ³		
C/ C 8/25 CC	8, mor, um		
1			
0 0.1556	9.16 0.0357		
10 0.3307	19.47 0.0758		
20 0.5666	33.37 0.1300		
30 0.7720	45.46 0 1771		
40 0.0873			
40 0.90/3	70.74 0.2204		
50 1.5540	/3./4 0.3106		
Apparently these are average values of a	at least two analyses from a given bottle.		
The author did not indicate whether then	e were any differences in results using		
SmC1 from preparations 1 and 2.	,		
3 riom proparations - and -			
Recalculated by the compilers using 1977	IUPAC recommended atomic weights.		
	-8		
Revisibrated co	11d phone pat analyzed		
Equilibrated so	fild phase not analyzed.		
1			
	(
AUXILIA	ARY INFORMATION		
METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:		
Isothermal method. About 75-100 cc of sol	- Commercial solvent was permitted to stand		
vent + excess salt were placed in bottles	and over CaO for at least 1 week and then distil-		
agitated in a thermostat for at least 12 h	led. A middle portion (fraction not enoci-		
Too t water was wood for the 000 magnimum	nte fied) was retained and stored in a storeer		
The hettles was used for the o c measureme	flash h p 13/ ⁰ C fm solts smoot in 1005		
The bottles were fitted with ground glass	double emergine nitrates and a line in 1925 as		
stoppers and were sealed from the atmosphe	re double annohium nitrates were of "spectro-		
by placing gum rubber tubing over the stop	- scopic purity and converted to the oxide (no		
pers and necks of the bottles, and a rubbe	r details) and the anhydr chloride prepd by two		
bung was fitted into the upper end of the	methods. 1. The oxide was dissolved in aq		
tubing. After equilibration, the solution	- [HC] and the evenes UCl event must and		
were allowed to settle for at least 12 h.	s not and the excess hol evapa. The crystal- 1		
	and lized salt was dehydrated by heating in the		
using a calibrated 25 cc pinet, two sample	and lized salt was dehydrated by heating in the s presence of dry HCl first at 100°C for sev-		
using a calibrated 25 cc pipet, two sample	and lized salt was dehydrated by heating in the presence of dry HCl first at 100°C for sev-		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we	and lized salt was dehydrated by heating in the presence of dry HCl first at 100°C for sev- re eral h, then at 200°C. 2. The rare earth benzoate was putd from the ar chloride or		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we evaporated to dryness and dissolved in aq	and lized salt was dehydrated by heating in the presence of dry HCl first at 100°C for sev- re eral h, then at 200°C. 2. The rare earth benzoate was pptd from the aq chloride or		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we evaporated to dryness and dissolved in aq HCL and pptd as the oxalate by addn of oxa	and lized salt was dehydrated by heating in the presence of dry HCl first at 100°C for sev- re eral h, then at 200°C. 2. The rare earth benzoate was pptd from the aq chloride or lic nitrate with sodium benzoate, and the ben-		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we evaporated to dryness and dissolved in aq HCl and pptd as the oxalate by addn of oxa acid. The samples were filtered, washed w	and lized salt was dehydrated by heating in the s presence of dry HCl first at 100°C for sev- re eral h, then at 200°C. 2. The rare earth benzoate was pptd from the aq chloride or lic nitrate with sodium benzoate, and the ben- ith zoate dehydrated by heating to 110°C for at		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we evaporated to dryness and dissolved in aq HCl and pptd as the oxalate by addn of oxa acid. The samples were filtered, washed w dist water and ignited to constant weight	and lized salt was dehydrated by heating in the s presence of dry HCl first at 100°C for sev- re eral h, then at 200°C. 2. The rare earth benzoate was pptd from the aq chloride or lic nitrate with sodium benzoate, and the ben- ith zoate dehydrated by heating to 110°C for at as least 24 h. Extracting the chloride was car-		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we evaporated to dryness and dissolved in aq HCl and pptd as the oxalate by addn of oxa acid. The samples were filtered, washed w dist water and ignited to constant weight the oxide. The oxide was found to be in-	and lized salt was dehydrated by heating in the presence of dry HCl first at 100°C for sev- eral h, then at 200°C. 2. The rare earth benzoate was pptd from the aq chloride or lic nitrate with sodium benzoate, and the ben- ith zoate dehydrated by heating to 110°C for at least 24 h. Extracting the chloride was car- ried out with HCl satd ether, and the result-		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we evaporated to dryness and dissolved in aq HCL and pptd as the oxalate by addn of oxa acid. The samples were filtered, washed w dist water and ignited to constant weight the oxide. The oxide was found to be in- soluble in the organic solvent.	and lized salt was dehydrated by heating in the presence of dry HCl first at 100°C for sev- eral h, then at 200°C. 2. The rare earth benzoate was pptd from the aq chloride or lic nitrate with sodium benzoate, and the ben- ith zoate dehydrated by heating to 110°C for at as least 24 h. Extracting the chloride was car- ried out with HCl satd ether, and the result- ing chloride heated at 60°C first in a stream		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we evaporated to dryness and dissolved in aq HCl and pptd as the oxalate by addn of oxa acid. The samples were filtered, washed w dist water and ignited to constant weight the oxide. The oxide was found to be in- soluble in the organic solvent.	and lized salt was dehydrated by heating in the s presence of dry HCl first at 100°C for sev- re eral h, then at 200°C. 2. The rare earth benzoate was pptd from the aq chloride or lic nitrate with sodium benzoate, and the ben- ith zoate dehydrated by heating to 110°C for at least 24 h. Extracting the chloride was car- ried out with HCl satd ether, and the result- ing chloride heated at 60°C first in a stream of dry HCl and then in dry air. The salt was		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we evaporated to dryness and dissolved in aq HCl and pptd as the oxalate by addn of oxa acid. The samples were filtered, washed w dist water and ignited to constant weight the oxide. The oxide was found to be in- soluble in the organic solvent. ESTIMATED ERROR:	and lized salt was dehydrated by heating in the spresence of dry HCl first at 100°C for sev- re eral h, then at 200°C. 2. The rare earth benzoate was pptd from the aq chloride or lic nitrate with sodium benzoate, and the ben- ith zoate dehydrated by heating to 110°C for at as least 24 h. Extracting the chloride was car- ried out with HCl satd ether, and the result- ing chloride heated at 60°C first in a stream of dry HCl and then in dry air. The salt was stored in a desiccator over PrOr. Dry HCl		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we evaporated to dryness and dissolved in aq HCl and pptd as the oxalate by addn of oxa acid. The samples were filtered, washed w dist water and ignited to constant weight the oxide. The oxide was found to be in- soluble in the organic solvent. ESTIMATED ERROR:	and lized salt was dehydrated by heating in the s presence of dry HCl first at 100° C for sev- eral h, then at 200° C. 2. The rare earth benzoate was pptd from the aq chloride or lic nitrate with sodium benzoate, and the ben- ith zoate dehydrated by heating to 110° C for at least 24 h. Extracting the chloride was car- ried out with HCl satd ether, and the result- ing chloride heated at 60° C first in a stream of dry HCl and then in dry air. The salt was stored in a desiccator over P_20_5 . Dry HCl was preod from NaCl + HoSO, and by passing		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we evaporated to dryness and dissolved in aq HCL and pptd as the oxalate by addn of oxa acid. The samples were filtered, washed w dist water and ignited to constant weight the oxide. The oxide was found to be in- soluble in the organic solvent. ESTIMATED ERROR: Soly: precision probably within 3 %	 and lized salt was dehydrated by heating in the gresence of dry HCl first at 100°C for severe eral h, then at 200°C. 2. The rare earth benzoate was pptd from the aq chloride or 11c nitrate with sodium benzoate, and the benith zoate dehydrated by heating to 110°C for at least 24 h. Extracting the chloride was carried out with HCl satd ether, and the resulting chloride heated at 60°C first in a stream of dry HCl and then in dry air. The salt was stored in a desiccator over P₂0₅. Dry HCl was prepd from NaCl + H₂S0₄ and by passing the resulting HCl through H₂S0₄ dry H₂ 		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we evaporated to dryness and dissolved in aq HCl and pptd as the oxalate by addn of oxa acid. The samples were filtered, washed w dist water and ignited to constant weight the oxide. The oxide was found to be in- soluble in the organic solvent. ESTIMATED ERROR: Soly: precision probably within 3 % (compilers).	and lized salt was dehydrated by heating in the spresence of dry HCl first at 100°C for sev- eral h, then at 200°C. 2. The rare earth benzoate was pptd from the aq chloride or lic nitrate with sodium benzoate, and the ben- ith zoate dehydrated by heating to 110°C for at least 24 h. Extracting the chloride was car- ried out with HCl satd ether, and the resul- ing chloride heated at 60°C first in a stream of dry HCl and then in dry air. The salt was stored in a desiccator over P ₂ 0 ₅ . Dry HCl was prepd from NaCl + H ₂ S0 ₄ and by passing the resulting HCl through H ₂ S0 ₄ drying		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we evaporated to dryness and dissolved in aq HCl and pptd as the oxalate by addn of oxa acid. The samples were filtered, washed w dist water and ignited to constant weight the oxide. The oxide was found to be in- soluble in the organic solvent. ESTIMATED ERROR: Soly: precision probably within 3 % (compilers).	 and lized salt was dehydrated by heating in the spresence of dry HCl first at 100°C for severe eral h, then at 200°C. 2. The rare earth benzoate was pptd from the aq chloride or lic nitrate with sodium benzoate, and the benith zoate dehydrated by heating to 110°C for at least 24 h. Extracting the chloride was carried out with HCl satd ether, and the resulting chloride heated at 60°C first in a stream of dry HCl and then in dry air. The salt was stored in a desiccator over P205. Dry HCl was prepd from NaCl + H2S04 and by passing the resulting HCl through H2S04 drying towers. 		
using a calibrated 25 cc pipet, two sample were removed for analysis. The samples we evaporated to dryness and dissolved in aq HCl and pptd as the oxalate by addn of oxa acid. The samples were filtered, washed w dist water and ignited to constant weight the oxide. The oxide was found to be in- soluble in the organic solvent. ESTIMATED ERROR: Soly: precision probably within 3 % (compilers). Temp: precision ± 0.2 K (author).	 and lized salt was dehydrated by heating in the spresence of dry HCl first at 100°C for severe eral h, then at 200°C. 2. The rare earth benzoate was pptd from the aq chloride or lic nitrate with sodium benzoate, and the benith zoate dehydrated by heating to 110°C for at least 24 h. Extracting the chloride was carried out with HCl satd ether, and the resulting chloride heated at 60°C first in a stream of dry HCl and then in dry air. The salt was stored in a desiccator over P205. Dry HCl was prepd from NaCl + H2S04 and by passing the resulting HCl through H2S04 drying towers. 		

COMPONENTS:	0	ORIGINAL MEASUREMENTS:
<pre>(1) Samarium chloride; SmCl₃; [10361-82-7]</pre>	1	Kirmse, E.M.
(2) Alkoxy-ethanols		Tr. II Vses. Konf. po Teor. Rastvorov <u>1971</u> , 200-6.
VARIABLES:	P	PREPARED BY:
T/K = 298		T. Mioduski and M. Salomon
EXPERIMENTAL VALUES:		a
solvent		solubility nature of the 1 collid phase
2-methoxyethanol; C ₂ H ₂ O ₂ ;	[109-86-4]	$5.7 0.24 \text{SmCl}_{2} \cdot \text{nC}_{4} + 0_{2} (n=2-3)$
382		3 3 8 2
2-ethoxyethano1; $C_4H_{10}O_2$;	[110-80-5]	26.3 1.39 $smc1_3 \cdot 2c_4H_{10}O_2$
^a Molalities calculated by the	compilers.	
		INFORMATION
	AUAILIARI I	
METHOD/APPARATUS/PROCEDURE: Experimental details not given probably similar to previous w author which are compiled throu volume.	, but were orks of the ughout this	SOURCE AND PURITY OF MATERIALS: Nothing specified, but based on previous work by the authors the anhydrous salt was probably prepared by the method of Taylor and Carter (1).
l	Ŀ.	ESTIMATED EREOR.
		Nothing specified.
		REFERENCES: 1. Taylor, M.D.; Carter, C.P. J. Inorg. Nucl. Chem. <u>1962</u> , 24, 387.

COMPONENTS:	ORIGINAL MEASUREMENTS:
<pre>(1) Samarium chloride; SmCl₃; [10361-82-7]</pre>	Dzhuraev, Kh. Sh.; Mirsaidov, U.; Kurbanbekov, A.; Rakhimova, A.
(2) Diethyl ether (ethyl ether); C ₄ H ₁₀ 0; [60-29-7]	Dokl. Akad. Nauk Tadzh. SSR <u>1976</u> , 19, 32-4.
VARIABLES:	PREPARED BY:
T/K = 203	T. Mioduski
EXPERIMENTAL VALUES:	
The solubility of SmCl ₃ in diethyl ether at	20°C was reported to be
7.4.4	10 ⁻³ maga %
/.4 x	to mass %.
The corresponding molality calculated by the	compiler is
2 84 🕶	10^{-4} mol kg ⁻¹
2.04 X	
AUXILIARY	INFORMATION
METHOD APPARATUS /PROCEDURE .	SOURCE AND DUDITY OF MATERIALS.
Isothermal method employed. Equilibrum was	Anhydrous SmCl ₃ prepared by the ethanol
attained within 24 h and it was verified by	solvate method (no details given).
saturated solution and the equilibrated	Ethyl ether was dried with Na and
solid phase were analyzed. Sm determined	distilled from LiAlH4 before use.
pine buffer and methyl-thymol blue indica-	
tor. Chloride determined by titration with	
SmCl ₃ . The solid phase corresponded to SmCl ₃ .0,5Et ₂ 0 (the etherate was dried under	
vacuum at 40°C prior to analysis).	
	ESTIMATED ERROR.
	Nothing specified
	wentug opecificu.
	REFERENCES:

COMPONENTS :		ORIGINAL MEASURE	EMENTS :	
(1) Samarium chloride; SmCl [10361-82-7]	-3;	Kirmse, E.M.; Zwietasch, K.J.; Tirschmann, J.; Oelsner, L.; Niedergesaess, U. Z. Chem. 1968, & 472-3		
(2) Ethers	2. Chem. <u>1968</u> , <i>8</i> , 472-3. Kirmse, E.M. Tr. II Vses. Konf. po Teor. Rastvorov. <u>1971</u> , 200-6.			
VARIABLES:		PREPARED BY:		
Room temperature: T/K around	298	T. Mioduski and	M. Salomon	
EXPERIMENTAL VALUES:				
			SmCl ₃ solubil	ity ^{a,b}
solvent			mass %	mol kg ⁻¹
1-ethoxy-2-methoxyethane;	C ₅ H ₁₂ O ₂ ; [5	137-45-1]	0.45	0.018
1,3-dioxolane;	с ₃ н ₆ 0 ₂ ; [6	46-06-0]	2.6	0.104
l,4-dioxane;	C ₄ H ₈ O ₂ ; [1	23-91-1]	0.07	0.0027
^a Molalities calculated by the	compilers.			
^b Nature of solid phases not sp	pecified.			
	AUXILIARY	INFORMATION		
METHOD/APPARATUS/PROCEDURE:	are isothermall	SOURCE AND PURI	TY OF MATERIAL	S:
agitated at 25°C or at room t	emperature.	method of Taylo	or and Carter	(1).
the solubility was within explimits.	erimental error	No other inform	nation given.	
Sm was determined by complexe tion.	metric titra-			
No other details given.				
		ESTIMATED ERROR	:	
		Nothing specifi	Led.	
		REFERENCES:		
		1. Taylor, M.D. J. Inong. Nu	; Carter, C.P. Icl. Chem. <u>1962</u>	2, 24, 387.

COMPONENTS:	URIGINAL MEASUREMENTS:
(1) Samarium chloride; Smul ₃ ;	RUSSMANILI, K.; AUET-WELSDACH, C.
[10001-02-7]	Monstsh. Chem. <u>1965</u> , 96, 602-5.
(2) Tetrahydrofuran; $C_4 H_8^{0}$; [109-99-9]	
VARIABLES:	PREPARED BY:
Room temperature: T/K about 293	T. Mloduski
EXPERIMENTAL VALUES:	
The solubility of SmCl ₃ in tetrahydrofuran at as	room temperature (about 20 ⁰ C) was reported
1.49 g/1	00 ml solution
The solid phase is	
SmCl ₃ ·1.	9804 ^H 80.
}	
[
AUXILIARY	INFORMATION
METHOD /APPARATUS /PROCEDURE ·	SOURCE AND DURITY OF MATERIALS.
Isothermal method employed. The solution	Sources and purities not specified.
was equilibrated in an extractor for 60-80	SmC13 prepared by reaction of the oxide at
hours at room temperature. Samarium was de-	high temperatures with an excess of NH ₄ Cl
titration with EDTA using Xylenol Orange	rent of dry nitrogen, and then in vacuum
indicator. For the solid phase analysis,	to remove unreacted NH4C1.
the solvent was determined by difference.	Tetrahudrofuran was distilled from IdAlu
Anhydrous substances were handled in a drv	recranyulolulan was distilled from LIAIH4.
box through which was passed a current of	
dry and CO ₂ -free nitrogen.	}
	ESTIMATED EDDOR
	Nether and fill
}	Nothing specified.
	REFERENCES
1	
1	

COMPONENTS: (1) Samarium chloride; SmCl ₃ ; [10361-82-7]	ORIGINAL MEASUREMENTS: Korovin, S.S.; Galaktionova, O.V.; Lebedeva, E.N.; Voronskaya, G.N.					
(2) Tributy1phosphate; C ₁₂ H ₂₇ O ₄ P; [126-73-8]	Zh. Neorg. Khim. <u>1975</u> , 20, 908–14; Russ. J. Inorg. Chem. (Engl. Transl.) <u>1975</u> , 20, 508–11.					
VARIABLES:	PREPARED BY:					
T/K = 298	T. Mioduski and M. Salomon					
EXPERIMENTAL VALUES:						
Composition of saturated solution						
mass % mol/kg sln g dm ⁻³ mo	l dm ⁻³ mol kg ⁻¹ density/g cm ⁻³ (compiler)					
33.4 1.30 436.5 1	.70 1.95 1.30					
The solid phase is NdCl ₃						
AUXILIARY	INFORMATION					
METHOD/APPARATUS/PROCEDURE: Satd slns prepared isothermally with mag- netic stirring. Equil was attained after 25-30 d. The sln was centrifuged and an aliquot for analysis taken and added to methanol and pptd with aq NH ₃ . The pptd Sm(OH) ₃ was washed repeatedly and heated to the oxide for gravimetric analysis. The solid phase was analyzed (no details given) for phosphorous and only anhydr SmCl ₃ was found. All operations were performed in a dry box through which a stream of argon was passed.	SOURCE AND PURITY OF MATERIALS: Anhydrous SmCl ₃ prepd by chlorination of Sm ₂ O ₃ with CCl ₄ vapor (1,2). Source and purity of materials not given. Sm was analyzed gravimetrically, and Cl by Volhard's method. Tributylphosphate (TBP) was purified "by the standard method." No additional details given.					
The major objective of this work was to establish the nature of complextion between TBP and SmCl ₃ in solution. Additional studies with unsaturated solutions (IR spectra, viscosity, molar conductivities) are discussed in the source paper.	ESTIMATED ERROR: No estimates possible. REFERENCES: 1. Korshunov, B.G.; Drobot, D.V.; Bukhtiyarov, V.V.; Shevtsova, Z.N. Zh. Neorg. Khim. <u>1964</u> , 9, 1427. 2. Novikov, G.I.; Tolmacheva, V.D. Zh. Prikl. Khim. <u>1965</u> , 38, 1160.					

CONTRACTOR			OPTOTNAL MEASU	PENENTS .	
(1) Secondary chloride: Smc1 :		Kirmse, E.M.			
[10361-82-7]	-3'				
			Tr. II Vses.	Konf. po Tec	or. Rastvorov
(2) Amines			<u>1971</u> , 200-6.		
]					
			DDEDADED BY.		
VARIABLES:			PREPARED DI:		
T/K = 298		1	T. Mioduski a	nd M. Salomo	n
EXPERIMENTAL VALUES:					
					a
				SmCl ₃ solu	bility
1					-1 -1
solvent				mass %	mor kg
ł					
2-propanamine;	iso-C ₃ H ₉ N;	[75	5-31-0]	15.2	0.698
2-propen-1-amine ^b ;	C ₂ H ₇ N;	[10)7-11-9]	5.6	0.225
	37				
	a samelland				
Motalities calculated by th	le compilers.				
b _{The original paper simply s}	merifies the s	so1.	vent as CoHeNHo	, and upon r	equest the
author kindly identified th	he solvent as a	a11y	lamine.	, and apon r	equeur ene
[
1					
l					
1					
1					
6	AUXILIA	\RY	INFORMATION		
METHOD /APPARATIIS /PROCEDURE ·			SOURCE AND PUR	TTY OF MATER	TAIS
THE INDUCTION PARATOS / I ROCEDORE.			SOURCE AND TUR		1
Experimental details not giv	ven, but were		Nothing speci	tied, but ba	sed on previous
author which are compiled th	roughout this		probably prep	ared by the	method of Taylor
volume.	-		and Carter (1).	-
Noture of cold phases pat a	nontfield				
Nature of solid phases not s	specified.				
}					
1					
1					
			ESTIMATED ERRO	R:	
			Nothing specif	fled.	
1			opeci		
			REFERENCES:		
1			1. Taylor, M.I).; Carter,	С.Р.
1			J. Inorg. 1	lucl. Chem.	<u>1962</u> , 24, 387.
1					
1					

COMPONENTS:	ORIGINAL MEASUREMENTS .
(1) Samarium chloride: SmCl.:	Mikheev, N.B. Kamenekava A.N. Konovalova
[10361-82-7]	N.A.; Zhilina, T.A.
	Zh. Neorg. Khim. 1977, 22, 1761-6; Russ.
Hexamethylphosphorotriamide;	J. Inorg. Chem. Engl. Transl. 1977, 22,
$C_{6}H_{18}N_{3}OP;$ [680-31-9]	955-8.
- 10 -	
VARIABLES:	PREPARED BY:
Room Temperature: T/K = 298 ± 3	T. Mioduski
EXPERIMENTAL VALUES:	
At room temperature, the solubility was report	rted as
	-3
0.126 mol di	n -
The solid phase is the solvate SmCl., 3HMPT	
3	
It is apparent that the authors determined the	ne solubility of SmCl ₃ several times, but
onty the above single value was reported.	
	TNEODMATION
METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Anhydrous SmCl ₃ placed in a test-tube with	SmCl ₃ prepared similar to (1): a 6:1 molar
the solvent in a dry box and shaken at room	mixture of $NH_4C1 + Sm_2O_3$ was heated to 200
temperature. Aliquots removed periodically	to 400°C in a stream of inert gas. Excess
to test for equilibrium. The analysis was	NH4C1 sublimed, and the remaining SmC13
details) and by radioassay using 170_{Tm} .	contained less than 5% oxide impurity.
"The results obtained by the two methods	Hexamethylphosphorotriamide (HMPT) was
agreed." Analysis showed the solid phase to	purified as in (2).
be SmC13.3HMPT. Analysis of the solid	
phase performed by complexometric titration	
for Sm and by the Volhard method for C1:	
AMPT was obtained by difference.	
	ESTIMATED ERROR:
	Soly: \pm 0.001 mol dm ⁻³ at the 95% confidence
l l	Level.
	Temp: $25 + 3^{\circ}C$.
1	
	REFERENCES:
	Nucl. Chem. 1962. 24. 387.
	2. Feedahava M.C. Varatar VarMa
	2. romicneva, M.G.; Kessier, Yu.M.; Zabugova, S.F.; Alpatova, N.M.
1	Elektrokhimiya 1975. 11. 163.
	<u> </u>

COMPONENTS -		OPT GINAL MEASUPEMENTS .			
UMPONENTS:		Jundance E La Between L V			
(1) Samarium chloride; SmCl ₃ ; [10361-82-7]		Lyubimov, E.I.; Batyaev, I.M. 7h. Pribl Khim 1972 45 1176-8			
<pre>(2) Tetrachlorostannate; SnCl₄; [7646-78-8]</pre>		,,			
(3) Phosphorus oxychloride; POCl	;;				
VARIABLES: T/k = 293		PREPARED BY:			
Concentration of SnCl ₄		T. Mioduski			
EXPERIMENTAL VALUES:					
SnCl ₄ :POCl ₃ ratio Sr	1C1 ₄ concen	tration Sm20 ₃ solubility ^a			
(by volume)	mol dm^{-3}	moles $Sm dm^{-3}$			
1:250	0.035	0.10			
1:100	0.085	0.18			
1:50	0.17	0.28			
1:25	0.33	0.25			
1:15	0.59	0.11			
1:10	0.78	0.10			
^a This is also the solubility of Sm quantitatively converted to the c	Cl3 in the hloride ac	SnCl ₄ -POCl ₃ mixtures because the oxide is cording to			
Sm ₂ 0 ₃ +	- 6P0C13 -	$= 2 \text{SmCl}_3 + 3 P_2 O_3 Cl_4$			
	AUXILIARY	INFORMATION			
METHOD APPARATUS PROCEDURE		SOURCE AND DUDTTY OF MATERIALS.			
METHOD/APPARATUS/PROCEDURE: Isothermal method used. POCl ₃ + SnCl ₄ solutions were prepared by volume in a dry		Sm ₂ O ₃ of "the first sort" was heated at 950°C for 2 hours.			
chemical analysis for Sn. This so Sm_2O_3 were placed in sealed ampoul to $20-250^{\circ}C$ to increase the rate of and then rotated in an air thermos $20^{\circ}C$ for 2-200 hours. Without preequilibrium was established after Preheating to $120^{\circ}C$ lowered the equinor time at 20° to 2 hours.	lution and es, heated f solution, tat at heating, 200 hours. uilibra-	"Pure" grade SnCl4 and POCl3 were dehy- drated with P ₂ O ₅ and distilled under vacuum.			
Sm was determined by colorimetric and in some cases by the oxalate m The reported solubilities are mean based on 3-5 parallel determinatio	analysis, ethod. values ns.	ESTIMATED ERROR: Soly: authors state the "coefficient of variance" to be less than 7%. Temp: precision presumably ± 0.2K			
		REFERENCES:			