COMPONENTS:	EVALUATOR:
(1) Styrene; C ₈ H ₈ ; [100-42-5] (2) Water; H ₂ O; [7732-18-5]	G.T. Hefter, School of Mathematical and Physical Sciences, Murdoch University, Perth, W.A., Australia. July 1985

CRITICAL EVALUATION:

Quantitative solubility data for the styrene (1) - water (2) system have been reported in the publications listed in Table 1.

TABLE 1. Quantitative Solubility Studies of the Styrene (1) - Water (2) System

-			
Reference	T/K	Solubility	Method
Lane (ref 1)	298-324	mutual	various ^a
Fordyce and Chapin (ref 2)	333	(1) in (2)	titration
Frilette and Hohenstein (ref 3)	298	(l) in (2)	unspecified
Andrews and Keefer (ref 4)	298	(l) in (2)	spectrophotometric
Banerjee <i>et al</i> . (ref 5)	298	(l) in (2)	HPLC

 α Chemical analysis and cloud point measurements for (1) in (2). Karl Fischer and cloud point measurements for (2) in (1).

The original data in these publications are compiled in the Data Sheets immediately following this Critical Evaluation. For convenience further discussion of this system will be in two parts.

1. SOLUBILITY OF STYRENE (1) IN WATER (2)

All the available data (ref 1-5) are listed in Table 2. At 298K the agreement among the independent measurements (ref 1,3-5) is reasonable but not sufficient to enable the average value to be Recommended.

At other temperatures, the value of Fordyce and Chapin (ref 2) at ~ 333K is very much higher than that of Lane (ref 1). Since the latter were obtained by two independent methods and, as already noted, are in fair agreement with other determinations at 298K, the datum of Fordyce and Chapin is rejected. In the absence of confirmatory studies the data at temperatures other than 298K should be regarded as very tentative.

(continued next page)

COMPONENTS:	EVALUATOR:
<pre>(1) Styrene; C₈H₈; [100-42-5] (2) Water; H₂O; [7732-18-5]</pre>	G.T. Hefter, School of Mathematical and Physical Sciences, Murdoch University, Perth, W.A., Australia.
	July 1985.

CRITICAL EVALUATION: (continued)

TABLE 2. Tentative Values of the Solubilityof Styrene (1) in Water (2)

Solubility	values	
Reported values ^a	"Best" val	ues
(g(l)/100g sln)	g(l)/100g sln	10 ⁵ x ₁
0.29* (ref 1)	0.029	5.0
0.030* (ref 1)	0.030	5.2
0.033* (ref 1), 0.022 (ref 3), 0.030 (ref 4), 0.016 (ref 5)	0.025 ± 0.006^{b}	4.3
0.034* (ref 1)	0.034	5.9
0.040* (ref 1)	0.040	6.9
0.046* (ref 1)	0.046	8.0
0.053* (ref 1), 0.95 (ref 2) c	0.053	9.2
	Solubility Reported values ^a (g(l)/100g sln) 0.29* (ref l) 0.030* (ref l) 0.033* (ref l), 0.022 (ref 3), 0.030 (ref 4), 0.016 (ref 5) 0.034* (ref 1) 0.040* (ref 1) 0.046* (ref 1) 0.053* (ref 1), 0.95 (ref 2) ^c	Solubility valuesReported values"Best" val $(g(1)/100g sln)$ $g(1)/100g sln$ $0.29*$ (ref 1) 0.029 $0.030*$ (ref 1) 0.030 $0.033*$ (ref 1), 0.022 (ref 3), 0.025 ± 0.006^b 0.030 (ref 4), 0.016 (ref 5) 0.034 $0.040*$ (ref 1) 0.040 $0.046*$ (ref 1) 0.046 $0.053*$ (ref 1), 0.95 (ref 2) c

a Values marked with an asterisk (*) were obtained by the Evaluator by graphical interpolation of the author's two data sets, followed by averaging.

b Average (± σ_n) of all data; σ_n has no statistical significance. c At T = 333.5K, value rejected: see text.

2. THE SOLUBILITY OF WATER (2) IN STYRENE (1)

The solubility of water in styrene has been reported in only one study (ref 1) and thus no Critical Evaluation is possible. The interested user is referred to the relevant data sheet for the experimental solubility values.

REFERENCES

1. Lane, W.H. Ind. Eng. Chem. Anal. Ed. 1946, 18, 295-6.

2. Fordyce, R.G.; Chapin, E.C. J. Am. Chem. Soc. 1947, 69, 581-3.

3. Frilette, V.J.; Hohenstein, W.P. J. Polym. Sci. <u>1948</u>, 3, 22-31.

4. Andrews, L.J.; Keefer, R.M. J. Am. Chem. Soc. 1950, 72, 5034-7.

 Banerjee, S.; Yalkowsky, S.H.; Valvani, S.C. Env. Sci. Technol. <u>1980</u>, 14, 1227-9.

COMPONENTS	OBICINAL MEASUBEMENTS -
CATE ONEMIS .	CALCUMAL MEASUREMENTS:
(1) Styrene; C ₈ H ₈ ; [100-42-5]	Lane, W.H.
(2) Water; H ₂ O; [7732-18-5]	Ind. Eng. Chem. Anal. Ed. <u>1946</u> , 18. 295-6.
	10, 200 00
VARIABLES:	PREPARED BY:
Temperature: 7-65°C	A. Maczynski and Z. Maczynska
EXPERIMENTAL VALUES:	
Solubility of	styrene in water
t/°C g(1)100 ($\frac{10^5 x_1}{10^5 x_1}$ (compiler)
(a) Formaldehyde - Sulfuric Acid	Reagent Method
7 0.029	5.0
24 0.033	5.7
32 0.036	6.2
40 0.040	6.9
51 0.045	7.8
(b) Cloud Point Method	
15 0.025	4.3
25 0.031	5.3
44 0.040	6.9
49 0.045	7.8
56 0.050	8.6
65 0.058	10.0
AUXILI	ARY INFORMATION
METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
(a) The solubility of (1) in (2)	was (1) source not specified; fresh
determined by means of the formal hyde-sulfuric acid reagent, ref (de- samples; used as received.
The value shown for 7°C is the me	(2) not specified.
of three determinations, and the value for 25°C is the mean of two	
determinations; all other data ar	e
(b) The cloud point exhibited by	this
system appeared to be very sharp,	as
which they were cloudy within 1°C	ESTIMATED ERROR:
The cloud point data are averages from two to eight separate determ	of i- temp, (b) ± 0.5°C (from two to
nations. Cloud points at 0.025 g	(1) eight determinations)
100 g Solution were very faint.	REFERENCES
	 Morris, H.E.; Stiles, R.B.; Lane, W.H. Ind. Eng. Chem. Anal. Ed. <u>1946</u>, 18, 294.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Styrene; C ₈ H ₈ ; [100-42-5]	Lane, W.H.
(2) Water; H ₂ O; [7732-18-5]	Ind. Eng. Chem. Anal. Ed. <u>1946</u> , 18, 295-6.
VARIABLES:	PREPARED BY:
Temperature: 6-51°C	A. Maczynski and Z. Maczynska
EXPERIMENTAL VALUES:	
Solubility of w	ater in styrene
t/°C g(2)/100 g	sln $10^3 x_2$ (compiler)
(a) Karl Fischer Reagent Method	
6 0.032	1.8
24 0.066	3.8
31 0.084	4.8
40 0.101	5.8
51 0.123	7.1
(b) Cloud Point Method	
14 0.040	2.3
27 0.060	3.5
34 0.080	4.6
40 0.100	5.7
45 0.120	6.9
AUXILIAR	Y INFORMATION
METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
 (a) A large sample of (1) containing a slight excess of (2) was shaken at a given temperature and then allowed to stand in a water bath at this temperature for 24 hr to ensure complete separation of the two phases before withdrawal of sample of the rich phase for titration of the water present with the Karl Fischer reagent. (b) Duplicate determinations gave cloud points agreeing within 1°C, except in the case of 0.120 g(1)/100 g solution where the agreement was within about 3°C. Cloud points at 0.040 (1)/100 g solution were very faint. No more details were reported. 	 (1) source not specified; fresh samples; used as received. (2) not specified. ESTIMATED ERROR: soly. (a) ± 1.5% (from two determinations) temp. (b) ± 1 to ± 3°C. REFERENCES:
reported.	

DOMPONENTS: ORIGINAL MEASUREMENTS: (1) Styrene; C _g H _g ; [100-42-5] Fordyce, R.G.; Chapin, E.C. (2) Water; H ₂ O; [7732-18-5] J. Am. Chem. Soc. <u>1947</u> , 00, 581-3. VARIABLES: PREPARED BY: One temperature: 60.3°C EXPERIMENTAL VALUES: The solubility of styrene in water at 60.3 C was reported to be 0.96 g(l)//100 g(2). The corresponding mass percent and mole fraction, x ₁ , calculated by the compiler are 0.95 g(l)/100 g sln and 1.66 x 10 ⁻³ . METHOD/APPARATUS/PROCEDURE: SOURCE AND FURITY OF MATERIALS; Into two stoppered 50 mL Erlenneyer SOURCE AND FURITY OF MATERIALS; Into two stoppered 50 mL Erlenneyer Coll Coll Coll Coll Coll Coll Coll Coll		5
(1) Styrene; C _g H _g ; [100-42-5] Fordyce, R.G.; Chapin, E.C. (2) Water; H ₂ O; [7732-18-5] J. Am. Chem. Soc. <u>1947</u> , 89, 581-3. VARIABLES: Difference One temperature: 60.3°C A. Maczynski EXPERIMENTAL VALUES: PREPARED BY: The solubility of styrene in water at 60.3 C was reported to be 0.96 g(1)//100 g(2). The corresponding mass percent and mole fraction, x_1 , calculated by the compiler are 0.95 g(1)/100 g sln and 1.66 x 10 ⁻³ . METHOD/APPARATUS/PROCEDURE: Source AND FURITY OF MATERIALS; That water bath regulated to 60.3 c table for a calibrated to for supper and the flasks were placed in a water-bath regulated to for sit calibrated micro-pipet and the flasks agitated after each addition. The saturation point was calculated from the number of drops added. Source AND FURITY OF MATERIALS; ESTIMATED ERROR: temp. :0.02°C soly. :0.05 g(1)/100 g sln REFERENCES: REFERENCES:	COMPONENTS :	ORIGINAL MEASUREMENTS:
(2) Water; H ₂ O; [7732-18-5] J. Am. Chem. Soc. <u>1947</u> , 69, 581-3. VARIABLES: PREPARED BY: One temperature: 60.3°C A. Maczynski EXFERIMENTAL VALUES: A. Maczynski The solubility of styrene in water at 60.3 C was reported to be 0.96 g(1)/100 g(2). The corresponding mass percent and mole fraction, x_1 , calculated by the compiler are 0.95 g(1)/100 g sln and 1.66 x 10 ⁻³ . METHOD/APPARATUS/FROCEDURE: Into two stoppered 50 nL Erlenmeyer flasks were weighed two 25.000 g ploced in a water-bath regulated to 60.3 r 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet and the flasks agitated after each addition. The saturation point was taken at the first appearance of the saluration point was calculated from the number of drops added. SURCE SIMATED ERROR: temp. :0.02°C soly. :0.05 g(1)/100 g sln REFERENCES: REFERENCES:	(1) Styrene; C _o H _o ; [100-42-5]	Fordyce, R.G.; Chapin, E.C.
VARIABLES: PREPARED BY: One temperature: 60.3°C A. Maczynski EXFERIMENTAL VALUES: The solubility of styrene in water at 60.3 C was reported to be 0.96 g(1)/100 g(2). The corresponding mass percent and mole fraction, x1, calculated by the compiler are 0.95 g(1)/100 g sln and 1.66 x 10 ⁻³ . The corresponding mass percent and mole fraction, x1, calculated by the compiler are 0.95 g(1)/100 g sln and 1.66 x 10 ⁻³ . METHOD/APPARATUS/PROCEDURE: Into two stoppered 50 nL Erlenmeyer flasks were weighed two 25.000 g portions of (2). The flasks were placed in a water-bath regulated to 60.3 to 0.3^2 c. 0.2°C. Coopenent (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet and the flasks agitated after each addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was calculated from the number of drops added. ESTIMATED ERROR: REFERENCES:	(2) Water: $H_{2}O$; $[7732-18-5]$	J. Am. Chem. Soc. 1947, 69, 581-3.
VARIABLES: PREPARED BY: A. Maczynski EXPERIMENTAL VALUES: The solubility of styrene in water at 60.3 C was reported to be 0.96 g(1)/100 g(2). The corresponding mass percent and mole fraction, x1, calculated by the compiler are 0.95 g(1)/100 g sln and 1.66 x 10 ⁻³ . MUXILIARY INFORMATION METROD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenneyer flasks were weighed two 25.000 g portions of (2). The flasks were placed in a water-bath regulated to 60.3 : 0.2°C. Component (1) was added a frop at a time to the water samples twe mains of a calibrated micro-plapt and the amount of (1) was added. ESTIMATED ERROR: Extension the first appearance of the turbidity and the amount of drops added. REFERENCES:		,
VARIABLES: PREPARED BY: One temperature: 60.3° C EXFERIMENTAL VALUES: A. Maczynski The solubility of styrene in water at 60.3 C was reported to be $0.96 \text{ g}(1)/100 \text{ g}(2)$. The corresponding mass percent and mole fraction, x_1 , calculated by the compiler are $0.95 \text{ g}(1)/100 \text{ g}$ sln and 1.66×10^{-3} . AUXILIARY INFORMATION NETHOD/AFPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenneyer flasks were weighed two 25.000 g portions of (2). The flasks were placed to 60.3 ± 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet and the first appearance of the turbidity and the amount of (1) was added a. EXEMPTION The saturation point was added. EXEMPTION EXEMPTION REFERENCES:		
One temperature: 60.3°C A. Maczynski EXFERIMENTAL VALUES: Ite solubility of styrene in water at 60.3 C was reported to be 0.96 g(1)/100 g(2). The corresponding mass percent and mole fraction, x ₁ , calculated by the compiler are 0.95 g(1)/100 g sln and 1.66 x 10 ⁻³ . MINIMARY INFORMATION METROD/AFPARATUS/FROCEDURE: The two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g portions of (2). The flasks were placed in a water-bath regulated to 60.3 ± 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet athen at the first appearance of the turbidity and the amount of (1) was added. SOURCE AND FURITY OF MATERIALS: (2) Not specified. (2) Not specified. (3) : 0.05 g(1)/100 g sln REFERENCES:	VARIABLES:	PREPARED BY:
EXPERIMENTAL VALUES: The solubility of styrene in water at 60.3 C was reported to be 0.96 g(1)/ 100 g(2). The corresponding mass percent and mole fraction, x ₁ , calculated by the compiler are 0.95 g(1)/100 g sln and 1.66 x 10 ⁻³ . AUXILIARY INFORMATION METROD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g portions of (2). The flasks were placed in a water-bath regulated to 60.3 : 2.02°C. Component (1) was added a trop at a time to the water samples by means of a calibrated after each addition. The saturation point was added. Source AND FURITY OF MATERIALS: (1) Pow Chemical Co, N-100; redistilled. (2) Not specified. (2) Not specified. (2) Not specified. (2) Not specified. (2) Not specified. ESTIMATED ERROR: temp. 10.02°C soly. 10.05 g(1)/100 g sln REFERENCES: REFERENCES:	One temperature: 60.3°C	A. Maczynski
AUXILIARY INFORMATION AUXILIARY INFORMATION AUXILIARY INFORMATION METROD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g por- in a water-bath regulated to 60.3 ± .02°C. Component (1) was added a aforp at a time to finasks were samples by means of a calibrated micro-pipet and the finask appearance of the turn the first appear	EVPERTMENTAL VALUES.	
AUXILIARY INFORMATION AUXILIARY INFORMATION METHOD/APPARATUS/FROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g por- tins awater-bath regulated to 60.3 ± 0.02°C. Component (1) was added a Atorp at a time to the water samples by means of a calibrated micro-pipet and the flasks agitated after each addition. The saturation point was take from the number of drops added. REFERENCES:	The solubility of styrene in water at 100 g(2).	60.3 C was reported to be 0.96 g(l)/
AUXILIARY INFORMATION METHOD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g por- tions of (2). The flasks were placed in a water-bath regulated to 60.3 ± 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was calculated from the number of drops added. ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:	The corresponding mass percent and mol compiler are 0.95 g(l)/100 g sln and l	le fraction, x_1 , calculated by the 1.66 x 10^{-3} .
AUXILIARY INFORMATION METHOD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g por- tions of (2). The flasks were placed in a water-bath regulated to 60.3 ± 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet and the flasks agitated after each addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was calculated from the number of drops added. ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES;		
AUXILIARY INFORMATION METHOD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g por- tions of (2). The flasks were placed in a water-bath regulated to 60.3 ± 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet and the flasks agitated after each addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was added. ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:		
AUXILIARY INFORMATION METHOD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g por- tions of (2). The flasks were placed in a water-bath regulated to 60.3 ± 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet and the flasks agitated after each addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was calculated from the number of drops added. ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:		
AUXILIARY INFORMATION METHOD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g por- tions of (2). The flasks were placed in a water-bath regulated to 60.3 ± 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet and the flasks agitated after each addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was calculated from the number of drops added. ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:		
AUXILIARY INFORMATION METHOD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g por- tions of (2). The flasks were placed in a water-bath regulated to 60.3 ± 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was calculated from the number of drops added. ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:		
AUXILIARY INFORMATION METHOD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g por- tions of (2). The flasks were placed in a water-bath regulated to 60.3 ± 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was calculated from the number of drops added. ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:		
AUXILIARY INFORMATION METHOD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g por- tions of (2). The flasks were placed 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet and the flasks agitated after each addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was calculated from the number of drops added. ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:		
AUXILIARY INFORMATION METHOD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g por- tions of (2). The flasks were placed in a water-bath regulated to 60.3 ± 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet and the flasks agitated after each addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was calculated from the number of drops added. ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:		
AUXILIARY INFORMATION METHOD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g por- tions of (2). The flasks were placed in a water-bath regulated to 60.3 ± 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet and the flasks agitated after each addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was calculated from the number of drops added. ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:		
<pre>METHOD/APPARATUS/PROCEDURE: Into two stoppered 50 mL Erlenmeyer flasks were weighed two 25.000 g por- tions of (2). The flasks were placed in a water-bath regulated to 60.3 ± 0.02°C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet and the flasks agitated after each addition. The saturation point was calculated from the number of drops added. ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:</pre>	AUXILIARY	INFORMATION
<pre>flasks were weighed two 25.000 g por- tions of (2). The flasks were placed in a water-bath regulated to 60.3 ± 0.02°C. Component (1) was added a drop at a time to the water samples. by means of a calibrated micro-pipet and the flasks agitated after each addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was calculated from the number of drops added.</pre> ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:	METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS;
 (2) Not specified. 	flasks were weighed two 25.000 g por-	redistilled.
and the flasks agitated after each addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was calculated from the number of drops added. ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:	in a water-bath regulated to $60.3 \pm 0.02^{\circ}$ C. Component (1) was added a drop at a time to the water samples by means of a calibrated micro-pipet	(2) Not specified.
ESTIMATED ERROR: temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:	addition. The saturation point was taken at the first appearance of the turbidity and the amount of (1) was	
temp. ±0.02°C soly. ±0.05 g(1)/100 g sln REFERENCES:	added.	ESTIMATED ERROR:
soly. ±0.05 g(1)/100 g sln REFERENCES:		temp. ±0.02°C
REFERENCES:		soly. ±0.05 g(1)/100 g sln
		REFERENCES:

	1	٠

COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Styrene; C ₈ H ₈ ; [100-42-5]	Frilette, V.J.; Hohenstein, W.P.
(2) Water; H ₂ O; [7732-18-5]	J. Polym. Sci. <u>1948</u> , 3, 22-31.
WADTADIEC.	DEDADED BY.
VARIABLES .	FREFARED DI:
One temperature: 25°C	A. Maczynski and Z. Maczynska
EXPERIMENTAL VALUES:	
The solubility of styrene in water at 0.022 g(1)/100 g sln.	25°C was reported to be
The corresponding mole fraction, x_{1} , compilers is 3.8 x 10 ⁻⁵ .	value calculated by the
AUXILIARY	INFORMATION
METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
The saturated solutions of (1) in	(1) not specified.
ways. In the first method, conju-	(2) distilled.
shaking together excess (1) with	
separate; the aqueous layer was	
the possibility of contaminating	
droplets a second method was uti-	
with (2) was completely submerged	ESTIMATED ERROR:
of (1) was then floated on top of (2) in the heater of the st	Not specified.
25°C, the sack was retrieved and	DEFEDENCES.
analyzed.	
The method of analysis was not described.	

	7
COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Styrene; C ₈ H ₈ ; [100-42-5]	Andrews, L.J.; Keefer, R.M.
(2) Water; H ₂ O; [7732-18-5]	J. Am. Chem. Soc. <u>1950</u> , 72, 5034-7.
_	
VARIABLES:	PREPARED BY:
One temperature: 25°C	A. Maczynski and Z. Maczynska
EVERDIARITAT VALUES.	
The colubility of sturono in water at	25° C was reported to be 0.030 $\sigma(1)$ (
100 g sln.	25 C was reported to be 0.030 g(1)/
The corresponding mole fraction, x_1 , c	alculated by the compilers is
5.19×10^{-3} .	
A mixture of (1) and (2) was rotated	SOURCE AND PURITY OF MATERIALS; (1) Eastman Kodak Co. white label;
for twenty hours in a constant tem- perature bath at 25°C. A sample	distilled shortly before use; 1 wt % of hydroguinone added
(5-20 mL) of the aqueous phase was	as stabilizer before distilla- tion: b p 76 C (78 mm Hg)
sured volume of hexane (10-50 mL) by	(2) Not en estária
meyer flask. Next, the absorbance of	(2) Not specified.
the hexane phase was measured against a hexane blank on the Beckman spec-	
trophotometer.	
	ESTIMATED ERROR:
	Not specified.
	REFERENCES:

1	۰.	2	P
4	-		L
		a	

COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Styrene; C ₈ H ₈ ; [100-42-5] (2) Water; H ₂ O; [7732-18-5]	Banerjee, S.; Yalkowsky, S.H.; Valvani, S.C. Environ. Sci. Technol. <u>1980</u> , 14, 1227-9.
VARIABLES:	PREPARED BY:
One temperature: 25°C	G.T. Hefter
EXPERIMENTAL VALUES:	
The solubility of styrene in water wa sln. Assuming a solution density of per cent and mole fraction (x_1) solub are 0.0160 g(1)/100 g sln and 2.77 x	s reported to be 1.54 x 10 ⁻³ mol/L 1.00 kg/L the corresponding mass filities, calculated by the compiler, 10 ⁻⁵ respectively.
AUXILIARY	INFORMATION
METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Experiments were performed in sealed	(1) Aldrich: purity not specified.
stainless steel centrifuge tubes. An excess of styrene was added to a tube containing distilled water, and the tube was sealed and allowed to equi- librate at $25 \pm 0.2^{\circ}$ C with constant or intermittent shaking. Equilibra- tion was generally complete within 1 week. The mixture was then centri- fuged at 10,000 rpm for 60 min in a head preequilibrated to $25 \pm 0.3^{\circ}$ C, following which aliquots of the solu- tion were removed for analysis by high-performance liquid chromato- graphy using a Waters M6000A instru- ment fitted with a C ₁₈ Bondapak column. The mobile phase was a mix- ture of methanol/water or aceto- nitrile/water. The entire procedure was carried out at least twice for	<pre>(2) Distilled. ESTIMATED ERROR: Temperature: ±0.2°C Solubility: ±5.7% rel. (represen- ting one std. dev.) REFERENCES:</pre>
each compound, and each analysis was also conducted in duplicate.	