COMPONENTS:

(1) Acetamide, N-[[(4-acetylamino)phenyl]-sulfonyl]- (acetyl sulfacetamide); $C_{10}H_{12}N_2O_4S$; [5626-90-4]

(2) Phosphoric acid, disodium salt; Na_2HPO_4; [7558-94-4]

(3) Phosphoric acid, monopotassium salt; KH_2PO_4; [7778-77-0]

(4) Water; H_2O; [7732-18-5]

VARIABLES:

Temperature, pH

ORIGINAL MEASUREMENTS:

Krüger-Thiemer, E.

Arch. Dermatol. Syphilis 1942, *183*, 90-116.

PREPARED BY:

R. Piekos

EXPERIMENTAL VALUES:

Composition of 1/15M phosphate buffer solutions			pH	Solubility			
				Room temp (ca 20°C		37°C	
Na_2HPO_4	KH_2PO_4	%Content		g%	10^3 mol dm^{-3} solution[a]	g%	10^3 mol dm^{-3} solution[a]
1.0	99.0	0.91	4.944	0.043	1.7	-	-
10.0	90.0	0.91	5.906	0.087	3.4	0.122	4.76
61.1	38.9	0.93	7.005	0.638	24.9	0.699	27.3
9.5	0.5	0.733[b]	7.51	2.150	83.89	-	-
94.7	5.3	0.95	8.018	0.930	36.3	-	-

[a] Calculated by compiler.

[b] Molar content; 10% buffer solution

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Acetyl sulfacetamide (0.5 g) was dissolved in 10 cm^3 of a buffer soln, shaken for 2 h at 20°C (or left for 48 h at 37°C), and filtered at respective temp. The filtrate was treated with equal vol of 2N HCl and refluxed for 15 min. After proper diln, a 1-cm^3 aliquot was withdrawn, acidified, cooled, and the sulfonamide content was detd colorimetrically by the Marshall method modified by Kimmig (1) using an Authenreith colorimeter. The pH was detd on an ultraionograph using a glass electrode.

SOURCE AND PURITY OF MATERIALS:

Acetyl sulfacetamide (source not specified) gave no coloration upon diazotization of its satd soln, thus showing absence of sulfanilamide. The source and purity of the remaining materials was not specified.

ESTIMATED ERROR:

Soly: precision: ±5% (author).

Temp: not specified.

pH: ±0.05 pH unit

REFERENCES:

1. Kimmig, J. *Arch. Dermatol.* *176*, 722; *Erg. Hyg.* 1941, *24*, 398.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Acetamide, N-[[(4-acetylamino)phenyl]-sulfonyl]- (acetyl sulfacetamide); $C_{10}H_{12}N_2O_4S$; [5626-90-4] (2) Phosphoric acid, disodium salt; Na_2HPO_4; [7558-94-4] (3) Phosphoric acid, monopotassium salt; KH_2PO_4; [7778-77-0] (4) Water; H_2O; [7732-18-5]	Bandelin, F. J.; Malesh, W. *J. Am. Pharm. Assoc., Sci. Ed.* 1959, *48*, 177-81
VARIABLES: pH	PREPARED BY: R. Piekos

EXPERIMENTAL VALUES:

Solubility of acetyl sulfacetamide in buffers of varying mixtures of $Na_2HPO_4 \cdot 7H_2O$ (71.6 g/l distilled water; 0.27 mol dm^{-3}, compiler) and KH_2PO_4 (36.3 g/l distilled water; 0.27 mol dm^{-3}, compiler) at 37°C.

Equilibrium pH	Solubility (based on sulfacetamide)	
	mg/100 ml	10^2 mol dm^{-3} [a]
4.5 (initial pH)	60	0.3
4.5	125	0.58
4.8	250	1.2
5.3	550	2.6
5.6	1150	5.37
5.9	2310	10.8
6.6	3900	18.2
7.0	3900	18.2

[a] Calculated by compiler.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Solns were prepd by adding an excess of acetyl sulfacetamide to 10 ml of buffer soln at each pH level in 18 x 150-mm test tubes, stoppering the tubes, placing in water bath at 37°C with gentle agitation for 24 h. The solute was then hydrolyzed with 5% H_2SO_4 for 1 h to liberate sulfacetamide. One-ml aliquot of the hydrolyzate was accurately pipetted into a volumetric flask for diln and analysis. The sulfonamide was assayed colorimetrically by the method of Bratton and Marshall as described in detail by Biamonte and Schneller (1). A standard curve was prepd using accurately prepd standard solutions.

SOURCE AND PURITY OF MATERIALS:

Neither source nor purity of the reagents were specified. Distilled water was used.

ESTIMATED ERROR:

Soly: av values of duplicate runs are reported (authors).

Temp and pH: not specified.

REFERENCES:

1. Biamonte, A. R.; Schneller, G. E. *J. Am. Pharm. Assoc., Sci. Ed.*, 1952, *41*, 341.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Acetamide, N-[[(4-acetylamino)phenyl]-sulfonyl - (acetyl sulfacetamide); $C_{10}H_{12}N_2O_4S$; [5626-90-4] (2) Calcium chloride; $CaCl_2$; [10043-52-4] (3) Magnesium chloride; $MgCl_2$; [7786-30-3] (4) Phosphoric acid, monoammonium salt; $NH_4H_2PO_4$; [7722-76-1] (5) Potassium chloride; KCl; [7447-40-7] (6) Sodium chloride; NaCl; [7647-14-5] (7) Urea; CH_4N_2O; [57-13-6] (8) Water; H_2O; [7732-18-5]	Bandelin, F. J.; Malesh, W. *J. Am. Pharm. Assoc., Sci. Ed.* 1959, *48*, 177-81.
VARIABLES: pH at 37°C	PREPARED BY: R. Piekos

EXPERIMENTAL VALUES:

Solubility of acetyl sulfacetamide in a solution containing $CaCl_2$ 0.143, $MgCl_2$ 0.121, $NH_4H_2PO_4$ 0.300, KCl 1.660, NaCl 2.950 and urea 20 g/dm^3 (synthetic urine, Mosher Vehicle) at 37°C.

Equilibrium pH	Solubility (based on sulfacetamide)	
	mg/100 ml	mol/dm^3[a]
4.5	240	0.94
5.0	310	1.2
5.5	505	2.0
6.0	1050	4.1
6.5	2520	9.8
7.0	5600	21.8

[a] Calculated by compiler.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Excess acetyl sulfacetamide was added to aliquots of synthetic urine solns and 1% H_3PO_4 or 1% NaOH solns were used to adjust the pH to the required value. The solns were agitated for 24 h with addn of acid or base to keep them at the desired pH level until equilibrium was attained. Then the solns were filtered and in aliquots acetyl sulfacetamide was assayed spectrophotometrically by the method described by Biamonte and Schneller (1). Before detn the soln was refluxed with 5% H_2SO_4 for 1 h to liberate the free amino compd.	Nothing specified.
	ESTIMATED ERROR: Soly: average values of 2 detns were given. Temp: not specified. pH: not specified.
	REFERENCES: 1. Biamonte, A. R.; Schneller, G. E., *J. Am. Pharm. Assoc., Sci. Ed.* 1952, *41*, 341.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Acetamide, N-[[(4-acetylamino)phenyl]-sulfonyl]-; $C_{10}H_{12}N_2O_4S$; [5626-90-4] (2) Ethanol; C_2H_6O; [64-17-5] (3) Water; H_2O; [7732-18-5]	Sapozhnikova, N. V.; Postovskii, I. Ya. *Zh. Prikl. Khim.* 1944, *17*, 427-34.
VARIABLES: Concentration of ethanol	**PREPARED BY:** R. Piekos

EXPERIMENTAL VALUES:

Concentration of ethanol	Solubility at 75°C	
Weight%	Weight%	10^2 mol kg^{-1} solvent[a]
0	0.24	0.90
19.2	0.71	2.66
38.3	1.59	6.01
57.6	2.3	8.8
67.2	3.6	14
76.4	3.7	14
96	4.3	17

[a] Calculated by compiler.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

The acetylated sulfonamide was dissolved in EtOH - water mixts to form satd solns which were occasionally agitated in glass vessels immersed in a thermostat. The equilibrium was usually attained after 1 h. Five- to 100-cm^3 samples of the satd soln were placed in Pt crucibles or dishes and evapd to dryness at temps lower than 110-115°C. The residue was dried to const wt at 105-110°C and weighed.

SOURCE AND PURITY OF MATERIALS:

Pure recrystd acetylated sulfonamide was used. Its mp conformed to that reported in the literature. The purity of ethanol and water was not specified.

ESTIMATED ERROR:

Soly: quite reliable results were obtained (authors).

Temp: ±0.05°C (authors).

REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Crotonamide, 3-methyl-N-[(4-aminophenyl)sulfonyl]- (irgamide); $C_{11}H_{14}N_2O_2S$; [115-68-14] (2) Phosphoric acid, disodium salt; Na_2HPO_4; [7558-94-4] (3) Phosphoric acid, monopotassium salt; KH_2PO_4; [7778-77-0] (4) Water; H_2O [7732-18-5]	Pulver, R.; Suter, R. *Schweiz. Med. Wochenschr.* 1943, *73(13)*, 403-8.
VARIABLES: pH	PREPARED BY: R. Piekos

EXPERIMENTAL VALUES:

Solubility of irgamide in M/15 phosphate buffers (according to Sørensen) at 20°C

pH	mg%	10^2 mol dm^{-3} [a]
6.0	95	0.37
7.0	385	1.51
8.0	620	2.44

[a] calculated by compiler.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Nothing specified.	Nothing specified.
	ESTIMATED ERROR: Nothing specified.
	REFERENCES: