

**LAMPIRAN A**  
**PERHITUNGAN NILAI PKA ASAM O-(4-METILBENZOIL)**  
**SALISILAT DENGAN KONSENTRASI METANOL 6%**

pH	Serapan	pKa	pKa rata-rata
2,4	1,211		
4,4	1,025	4,22	
5,4	0,926	4,32	4,53
6,4	0,915	5,04	
8,4	0,902		

$$pKa = pH - \log \frac{A_{HA} - A_{obs}}{A_{obs} - A_{A^-}}$$

$$pKa = 4,4 - \log \frac{1,211 - 1,025}{1,025 - 0,902} = 4,22$$

$$pKa = 5,4 - \log \frac{1,211 - 0,926}{0,926 - 0,902} = 4,32$$

$$pKa = 5,4 - \log \frac{1,211 - 0,915}{0,915 - 0,902} = 5,04$$

$$pKa \text{ rata-rata} = \frac{(pKa_{pH4,4} + pKa_{pH5,4} + pKa_{pH6,4})}{3}$$

$$= \frac{(4,22 + 4,32 + 5,04)}{3} = 4,53$$

LAMPIRAN B

TABEL UJI R

DEGREES OF FREEDOM (DF)	5 PERCENT	1 PERCENT	DEGREES OF FREEDOM (DF)	5 PERCENT	1 PERCENT
1	.997	1.000	24	.388	.496
2	.950	.990	25	.381	.487
3	.878	.959	26	.374	.478
4	.811	.917	27	.367	.470
5	.754	.874	28	.361	.463
6	.707	.834	29	.355	.456
7	.666	.798	30	.349	.449
8	.632	.765	35	.325	.418
9	.602	.735	40	.304	.393
10	.576	.708	48	.288	.372
11	.553	.684	50	.273	.354
12	.532	.661	60	.250	.325
13	.514	.641	70	.232	.302
14	.497	.623	80	.217	.283
15	.482	.606	90	.205	.267
16	.468	.590	100	.195	.254
17	.456	.575	125	.174	.228
18	.444	.561	150	.159	.208
19	.433	.549	200	.138	.181
20	.423	.537	300	.113	.148
21	.413	.526	400	.098	.128
22	.404	.515	500	.088	.115
23	.396	.505	1000	.062	.081

Sumber: Soedigdo & Soedigdo (1977).

## LAMPIRAN C

### Laporan Hasil Pemeriksaan Senyawa

1. Nama senyawa : O-(4-Metilbenzoi)salisilat
2. Dibuat oleh : Siswandono
3. Tanggal dibuat : 7 Desember 2006
4. Rendemen : 60%
5. Pemeriksaan :

No.	Jenis Pemeriksaan	Hasil Pemeriksaan
1. 2. 3. 4.	Pemerian/Organoleptis Jarak lebur Kelarutan Uji KLT(3 eluen)	Serbuk warna putih, tidak berbau. 125-126°C. Metanol, etanol, aseton, dimetilsulfoksid. 1 noda.
5.	Spektrum UV: $\lambda$ maks. (nm) Dalam pelarut etanol	237
6.	Spektrum IR : $\nu$ ( $\text{cm}^{-1}$ ) Dalam pelet KBr	2868 (-OH, karboksilat ); 1786 (-C=O, karboksilat); & 1739 (-C=O, ester); 1499 dan 1478 (-C=C- aromatis); 891-698 (-C=C- aromatis, lentur, luar bidang)
7.	Spektrum $^1\text{H}$ NMR : $\delta$ (ppm) Dalam pelarut DMSO- $\text{D}_6$	10,329, s, (-COOH); 8,143-8,023, m, (-C <sub>6</sub> H <sub>3</sub> ); 7,645- 7,198, m, (-C <sub>6</sub> H <sub>3</sub> ); 2,451, s, (-CH <sub>3</sub> );

Kesimpulan : Senyawa adalah O-(4-metilbenzoi)salisilat.

Surabaya, 25 September 2009

Mengetahui  
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Ketua Peneliti,

*Siswandono*

Prof. Dr. Siswandono, MS.

**LAMPIRAN D**  
**SERTIFIKAT ASAM SALISILAT**

06/05/26 17:21 Honeywell Specialty Chemicals Seelze GmbH (+49 5137 989 164) --> 6,0049896513416/ p. 1/1



Sigma-Aldrich Laborchemikalien GmbH D-30918 Seelze  
Telefon: +49 5137 8238-0



**CERTIFICATE OF ANALYSIS /  
INSPECTION CERTIFICATE 3.1 acc. to DIN EN 10204**

Seelze, 26.05.2006/758895  
Order-No.:  
Customer-No.:  
FAM-No.: 00498965134167  
Order-Code:  
Order-Code 2: ph  
Quantity:  
Production date: 22.Jul.1998  
rec. Retest Date: 31.Jul.2006

Article/Product: 27301      Batch : 82030  
Salicylic acid puriss., meets analytical specification of Ph. Eur., BP,  
USP

The quality certificate is valid for the time of delivery

assay (calc. to the dried substance)	99.7	%
melting range	159.7-160.4	°C
loss on drying	0.04	%
sulfated ash	<	0.05 %
heavy metals (as Pb)	<	0.001 %
chloride (Cl)	<	0.005 %
sulphate (SO <sub>4</sub> )	<	0.02 %
identity		complying
appearance of the solution		complying
related subst. (HPLC)	<	0.2 %
residual solvents		complying

Identity, assay and impurities are complying to the monographs of the above mentioned pharmacopoeias/codices.

- The minimum shelf life is based on the current knowledge and holds only for proper storage conditions in the originally closed flasks/ packages.
- We herewith confirm that the delivery is effected according to the technical delivery conditions agreed.
- The batch from which we delivered, showed the above-mentioned values.
- Particular properties of the products or the suitability for a particular area of application are not assured.
- We guarantee a proper quality within our General Conditions of Sales.

Sigma-Aldrich Laborchemikalien GmbH  
Quality Assurance

(Dr. Gaede)

Works Inspector

