

INSTRUMENT MAINTENANCE CHECKLIST

Date/Time : 19 May 2026
Company : PT Mersi Farman
Instrument Name : LC 06
Pump : e2695 (A24 SM4 216A)
Injector : e2695 (A24 SM4 216A)
Detector : 2498 (M23998300A)

No	Description	Results	Range	Condition	
				OK	Not OK
1.	Solvent Filter and CV Cleaning			✓	
2.	Priming System			✓	
3.	Pump Check				
	Delta Psi	2150 22Psi	< 2.5 % from max pressure (2130)	✓	
	CD Ratio		< 1.8		
4.	Flow Rate Test (1 mL/min)	10 min 05sec	10 min $\pm$ 18 Sec	✓	
6.	Lamp Hour	2817 hours	< 2000 hours		✓
7.	Wavelength Accuracy	N/A	UPLC PDA 256.46 $\pm$ 1.5 nm 378.914 $\pm$ 1.5 nm 486.14 $\pm$ 1.5 nm		
		256.44 379.020 521.94	UPLC PDA eλ & 2998 256.46 $\pm$ 1.5 nm 378.914 $\pm$ 1.5 nm 521.40 $\pm$ 1.5 nm	✓	
		N/A	HPLC UV/Vis 255 $\pm$ 2 nm 379 $\pm$ 2 nm 522 $\pm$ 2 nm		
8.	Verification Test (If needed)	0.3%	$\leq$ 1.0 % RSD Area	✓	



No.	Problem Identification
1	Lamp hour > 2000 H.

No.	Recommendation
1	UV lamp.

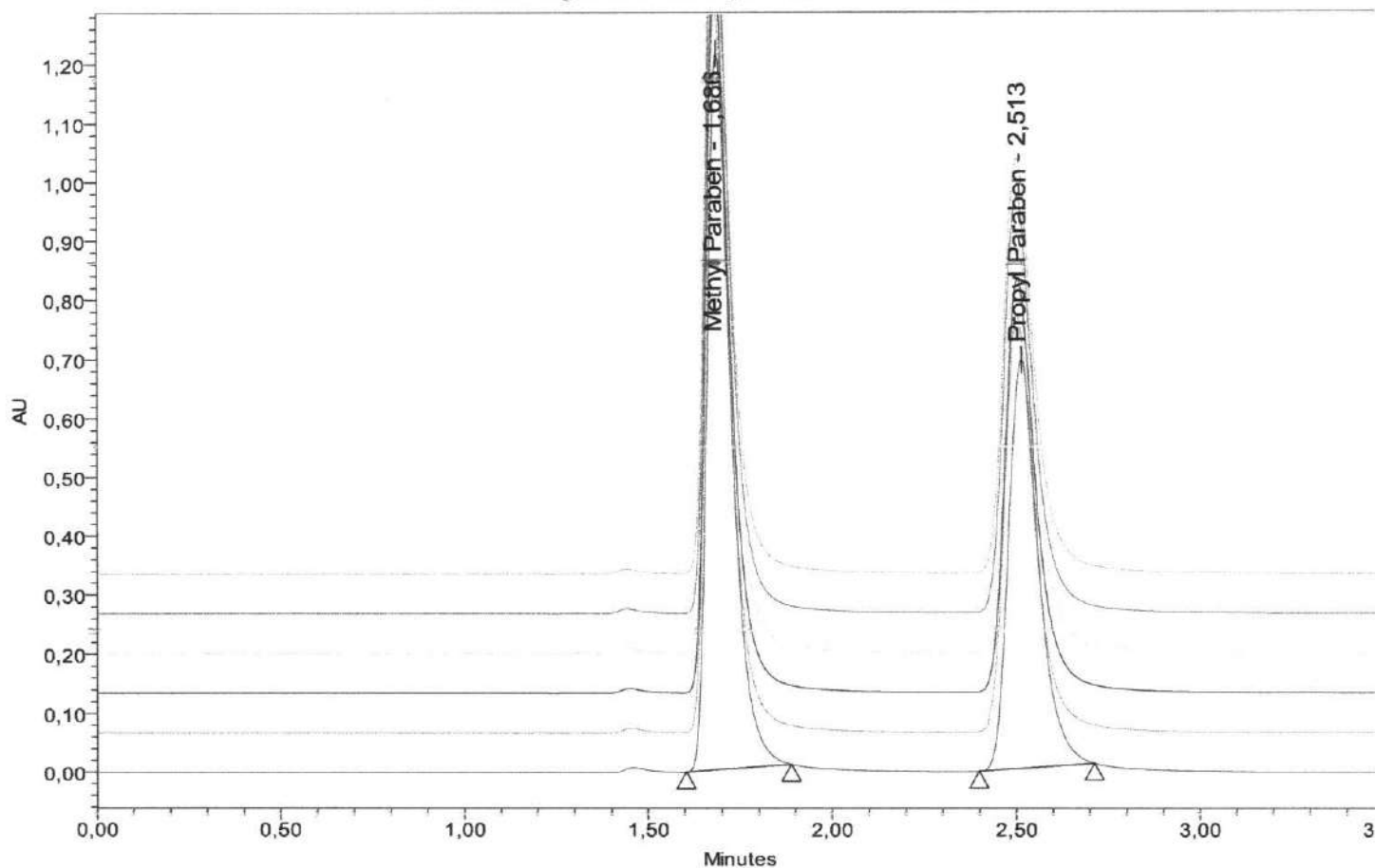
Customer,

()

Engineer,

()
A.H. Tolabi

Chromatogram Overlay with Z Axis Offset



Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 10:59:03 WIE
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 11:03:22 WIE
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 11:07:38 WIE
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 11:11:58 WIE
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 11:16:13 WIE
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 11:20:29 WIE

Retention Time Summarized by Name
Channel: 2998 Ch1 254nm@4.8nm

	Sample Name	Inj	Channel	Vial	Methyl Paraben	Propyl Paraben
1	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	1,686	2,513
2	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	1,682	2,502
3	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	1,683	2,504
4	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	1,684	2,504
5	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	1,683	2,500
6	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	1,681	2,500
Mean					1,683	2,504
Std. Dev.					0,002	0,005
% RSD					0,1	0,2

Area Summarized by Name
Channel: 2998 Ch1 254nm@4.8nm

	Sample Name	Inj	Channel	Vial	Methyl Paraben	Propyl Paraben
1	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	5499265	3938585
2	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	5506257	3962841
3	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	5502128	3956570
4	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	5499607	3958181
5	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	5511041	3968823
6	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	5521056	3967512
Mean					5506559	3958752
Std. Dev.					8385	11015
% RSD					0,2	0,3

Height Summarized by Name
Channel: 2998 Ch1 254nm@4.8nm

	Sample Name	Inj	Channel	Vial	Methyl Paraben (μ V)	Propyl Paraben (μ V)
1	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	1212916	692177
2	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	1221185	698735
3	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	1209778	694026
4	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	1211797	696359
5	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	1214027	700251
6	Repro Maintenance	1	2998 Ch1 254nm@4.8nm	25	1217706	697752
Mean					1214568	696550
Std. Dev.					4178	3015
% RSD					0,3	0,4

INSTRUMENT MAINTENANCE CHECKLIST

Date/Time : 13 May 2026 / 11:00
Company : PT. Mersiforma
Instrument Name : RD LC 01 UPLC
Pump : QSM (E21QSP 423A)
Injector : FTM (E21FTP 454A)
Detector : TUV (E21TUV 740)

No	Description	Results	Range	Condition	
				OK	Not OK
1.	Solvent Filter and CV Cleaning			✓	
2.	Priming System			✓	
3.	Pump Check				
	Delta Psi	6	< 2.5 % from max pressure (5502)	✓	
	CD Ratio	1.18	< 1.8	✓	
4.	Flow Rate Test (1 mL/min)	10 min 02 sec	10 min ± 18 Sec	✓	
6.	Lamp Hour	2474 hours	< 2000 hours		✓
7.	Wavelength Accuracy	N/A	<u>UPLC PDA</u> 256.46 ± 1.5 nm 378.914 ± 1.5 nm 486.14 ± 1.5 nm	N/A	N/A
		N/A	<u>UPLC PDA eλ & 2998</u> 256.46 ± 1.5 nm 378.914 ± 1.5 nm 521.40 ± 1.5 nm	N/A	N/A
		N/A	<u>HPLC UV/Vis</u> 255 ± 2 nm 379 ± 2 nm 522 ± 2 nm	N/A	N/A
8.	Verification Test (If needed)	0.1	≤ 1.0 % RSD Area	✓	



KROMTEKINDO
UTAMA

No.	Problem Identification
-	lamp 7200 lt
-	flowcell bocor

No.	Recommendation
-	ganti lamp
-	ganti Flowcell

Customer,

(
Ida)

Engineer,

(
Hikmat)

INSTRUMENT MAINTENANCE CHECKLIST

Date/Time : 13 May 2026 / 08.30
 Company : PT. Mersifarma
 Instrument Name : RD LC 02 UV
 Pump : e2695 (E21SMY949A)
 Injector : e2695 (E21SMY949A)
 Detector : 2489 (F2187E525A)

No	Description	Results	Range	Condition	
				OK	Not OK
1.	Solvent Filter and CV Cleaning			✓	
2.	Priming System			✓	
3.	Pump Check				
	Delta Psi	34	< 2.5 % from max pressure (2881)	✓	
	CD Ratio	1.15	< 1.8	✓	
4.	Flow Rate Test (1 mL/min)	0.9 min 57 sec	10 min ± 18 Sec	✓	
6.	Lamp Hour	2245 hours	< 2000 hours		✓
7.	Wavelength Accuracy	N/A	<u>UPLC PDA</u> 256.46 ± 1.5 nm 378.914 ± 1.5 nm 486.14 ± 1.5 nm	N/A	N/A
		N/A	<u>UPLC PDA eλ & 2998</u> 256.46 ± 1.5 nm 378.914 ± 1.5 nm 521.40 ± 1.5 nm	N/A	N/A
		256 378 521	<u>HPLC UV/Vis</u> 255 ± 2 nm 379 ± 2 nm 522 ± 2 nm	✓	
8.	Verification Test (If needed)	0.6	≤ 1.0 % RSD Area	✓	

No.	Problem Identification
	lamp > 2000 H

No.	Recommendation
	ganti lamp

Customer,

()

Engineer,

()

INSTRUMENT MAINTENANCE CHECKLIST

Date/Time : 13 May 2026 / 08.30
 Company : PT. Mersi Farma
 Instrument Name : RP LC 03 UV
 Pump : e2675 (E21 SMH 958A)
 Injector : e2675 (E21 SMH 958A)
 Detector : 2467 (F21BTE S30A)

No	Description	Results	Range	Condition	
				OK	Not OK
1.	Solvent Filter and CV Cleaning			✓	
2.	Priming System			✓	
3.	Pump Check				
	Delta Psi	46	< 2.5 % from max pressure (2386)	✓	
	CD Ratio	1.17	< 1.8	✓	
4.	Flow Rate Test (1 mL/min)	0.7 min 52 sec	10 min ± 18 Sec	✓	
6.	Lamp Hour	3290 hours	< 2000 hours		✓
7.	Wavelength Accuracy	N/A	<u>UPLC PDA</u> 256.46 ± 1.5 nm 378.914 ± 1.5 nm 486.14 ± 1.5 nm	N/A	N/A
		N/A	<u>UPLC PDA eλ & 2998</u> 256.46 ± 1.5 nm 378.914 ± 1.5 nm 521.40 ± 1.5 nm	N/A	N/A
		256 377 526	<u>HPLC UV/Vis</u> 255 ± 2 nm 379 ± 2 nm 522 ± 2 nm	✓	
8.	Verification Test (If needed)	0.4	≤ 1.0 % RSD Area	✓	

No.	Problem Identification
1	lost prime (sudah ganti check valve)
2	komp 2000

No.	Recommendation
	ganti komp

Customer,



(Itn)

Engineer,



(Hfmg)



INSTRUMENT MAINTENANCE CHECKLIST

Date/Time : 13 May 2020 / 10.00
Company : PT. Mersifarma
Instrument Name : PD LC 04 UV
Pump : e2635 (J22SMY714A)
Injector : e2635 (J22SMY714A)
Detector : 2489 (M22B7E 801A)

No	Description	Results	Range	Condition	
				OK	Not OK
1.	Solvent Filter and CV Cleaning			✓	
2.	Priming System			✓	
3.	Pump Check				
	Delta Psi	27	< 2.5 % from max pressure (1330)	✓	
	CD Ratio	1.13	< 1.8	✓	
4.	Flow Rate Test (1 mL/min)	10 min at sec	10 min ± 18 Sec	✓	
6.	Lamp Hour	3503 hour	< 2000 hours		✓
7.	Wavelength Accuracy	N/A	<u>UPLC PDA</u> 256.46 ± 1.5 nm 378.914 ± 1.5 nm 486.14 ± 1.5 nm	N/A	N/A
		N/A	<u>UPLC PDA eλ & 2998</u> 256.46 ± 1.5 nm 378.914 ± 1.5 nm 521.40 ± 1.5 nm	N/A	N/A
		255 378 520	<u>HPLC UV/Vis</u> 255 ± 2 nm 379 ± 2 nm 522 ± 2 nm	✓	
8.	Verification Test (If needed)	0.7	≤ 1.0 % RSD Area	✓	



KROMTEKINDO
UTAMA

No.	Problem Identification
	lamp 72000 H

No.	Recommendation
	ganti lamp

Customer,

(
Ita)

Engineer,

(
Hfmg.1)



INSTRUMENT MAINTENANCE CHECKLIST

Date/Time : 13 May 2016 / 10.00
 Company : PT. Messifarma
 Instrument Name : RD LC 05 UV
 Pump : e2695 (J22SM4 700A)
 Injector : e2695 (J22SM4 700A)
 Detector : 2489 (M22B7E 799A)

No	Description	Results	Range	Condition	
				OK	Not OK
1.	Solvent Filter and CV Cleaning			✓	
2.	Priming System			✓	
3.	Pump Check				
	Delta Psi	40	< 2.5 % from max pressure (2689)	✓	
	CD Ratio	1.14	< 1.8	✓	
4.	Flow Rate Test (1 mL/min)	10 min 00 sec	10 min ± 18 Sec	✓	
6.	Lamp Hour	3494 hour	< 2000 hours		✓
7.	Wavelength Accuracy	N/A	<u>UPLC PDA</u> 256.46 ± 1.5 nm 378.914 ± 1.5 nm 486.14 ± 1.5 nm	N/A	N/A
		N/A	<u>UPLC PDA eλ & 2998</u> 256.46 ± 1.5 nm 378.914 ± 1.5 nm 521.40 ± 1.5 nm	N/A	N/A
		236 376 521	<u>HPLC UV/Vis</u> 255 ± 2 nm 379 ± 2 nm 522 ± 2 nm	✓	
8.	Verification Test (If needed)	0.7	≤ 1.0 % RSD Area	✓	

No.	Problem Identification
	lamp > 2000 H

No.	Recommendation
	ganti lamp

Customer,

(
It)

Engineer,

(
Intmgt)

INSTRUMENT MAINTENANCE CHECKLIST

Date/Time : 19 May 2026 / 00:50

Company : PT Mersi Farma

Instrument Name : LC 07

Pump : e2695 (B245M4 259A)

Injector : e2695 (B245M4 259A)

Detector : 2489 (H2387E013A)

No	Description	Results	Range	Condition	
				OK	Not OK
1.	Solvent Filter and CV Cleaning			✓	
2.	Priming System			✓	
3.	Pump Check				
	Delta Psi	24 psi	< 2.5 % from max pressure (2500)	✓	
	CD Ratio	1.2	< 1.8	✓	
4.	Flow Rate Test (1 mL/min)	10 min 01 sec	10 min ± 18 Sec	✓	
6.	Lamp Hour	3698	< 2000 hours		✓
7.	Wavelength Accuracy	N/A	UPLC PDA 256.46 ± 1.5 nm 378.914 ± 1.5 nm 486.14 ± 1.5 nm	N/A	
		N/A	UPLC PDA eλ & 2998 256.46 ± 1.5 nm 378.914 ± 1.5 nm 521.40 ± 1.5 nm	N/A	
		256 378 521	HPLC UV/Vis 255 ± 2 nm 379 ± 2 nm 522 ± 2 nm	✓	
8.	Verification Test (If needed)	0.2%	≤ 1.0 % RSD Area	✓	

No.	Problem Identification
	- Lamp has almost 4000 H.

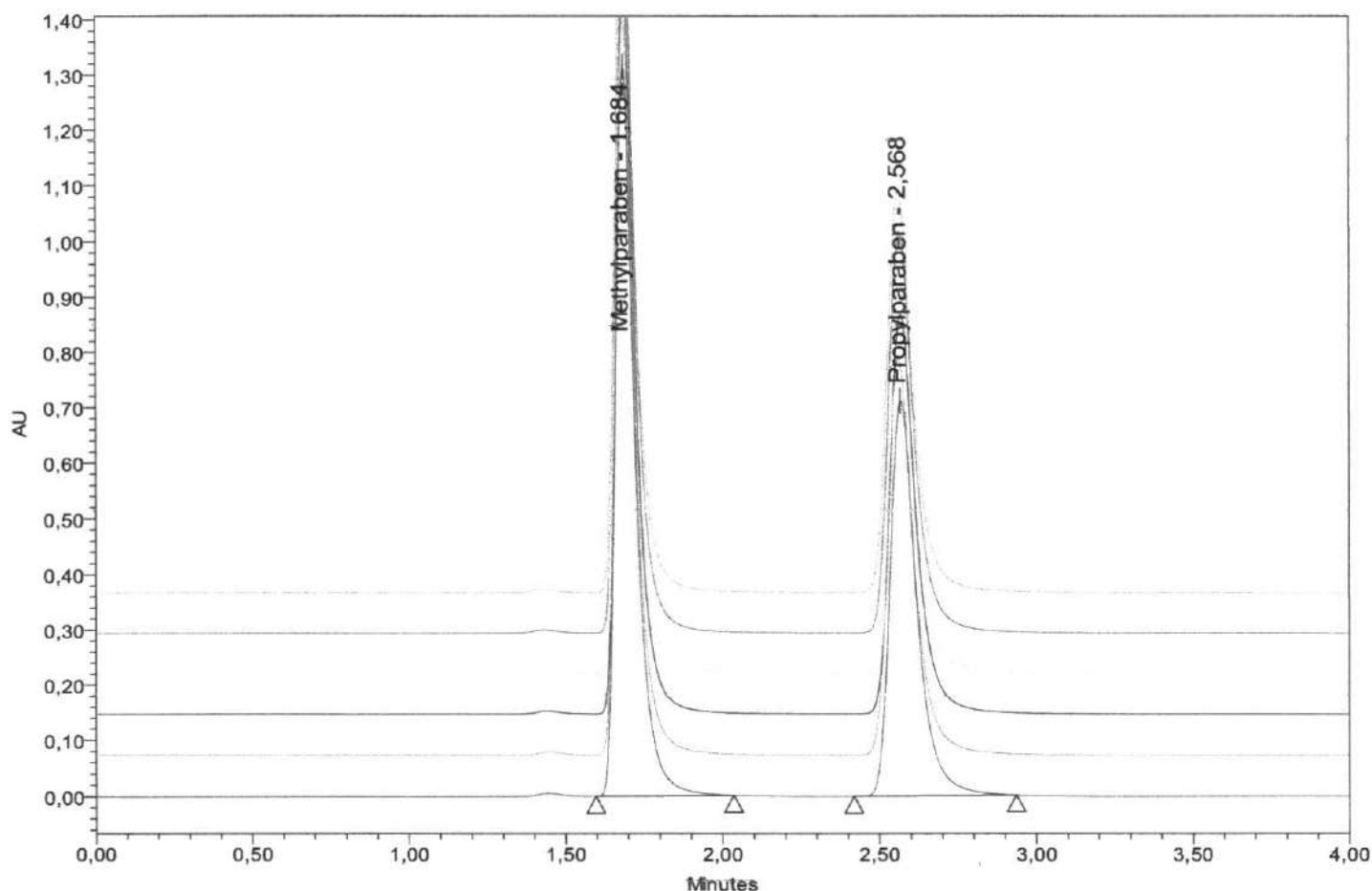
No.	Recommendation
	- UV Lamp

Customer,

()
Hm

Engineer,

()
A.H. Tolabi



Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 09:24:12 WIB;	Vial: 72; Injection: 1
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 09:28:57 WIB;	Vial: 72; Injection: 2
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 09:33:42 WIB;	Vial: 72; Injection: 3
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 09:38:27 WIB;	Vial: 72; Injection: 4
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 09:43:16 WIB;	Vial: 72; Injection: 5
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 09:48:00 WIB;	Vial: 72; Injection: 6

Peak Summary with Statistics

Name: Methylparaben

	Sample Name	Vial	Inj	Name	Retention Time (min)	Area
1	Repro Maintenance	72	1	Methylparaben	1,683	5783414
2	Repro Maintenance	72	1	Methylparaben	1,685	5777309
3	Repro Maintenance	72	1	Methylparaben	1,684	5782337
4	Repro Maintenance	72	1	Methylparaben	1,684	5763068
5	Repro Maintenance	72	1	Methylparaben	1,681	5790931
6	Repro Maintenance	72	1	Methylparaben	1,683	5773944
Mean					1,683	5778500,5
Std. Dev.					0,001	9525,9
% RSD					0,08	0,2

Peak Summary with Statistics

Name: Propylparaben

	Sample Name	Vial	Inj	Name	Retention Time (min)	Area
1	Repro Maintenance	72	1	Propylparaben	2,563	4204268
2	Repro Maintenance	72	1	Propylparaben	2,561	4213130
3	Repro Maintenance	72	1	Propylparaben	2,559	4211479
4	Repro Maintenance	72	1	Propylparaben	2,561	4215042
5	Repro Maintenance	72	1	Propylparaben	2,568	4198164
6	Repro Maintenance	72	1	Propylparaben	2,566	4217767
Mean					2,563	4209974,9
Std. Dev.					0,004	7357,6
% RSD					0,15	0,2

INSTRUMENT MAINTENANCE CHECKLIST

Date/Time : 19 May 2022 /
 Company : PT Mersi Farma
 Instrument Name : LC 08
 Pump : e269r (M23SM4062A)
 Injector : e2695 (M23SM4062A)
 Detector : 2489 (B2407 E144A)

No	Description	Results	Range	Condition	
				OK	Not OK
1.	Solvent Filter and CV Cleaning			✓	
2.	Priming System			✓	
3.	Pump Check				
	Delta Psi	24 psi	< 2.5 % from max pressure (2600)	✓	
	CD Ratio	1.1	< 1.8	✓	
4.	Flow Rate Test (1 mL/min)	10 min 03 sec	10 min ± 18 Sec	✓	
6.	Lamp Hour	4073	< 2000 hours		✓
7.	Wavelength Accuracy	N/A	UPLC PDA 256.46 ± 1.5 nm 378.914 ± 1.5 nm 486.14 ± 1.5 nm		
		N/A	UPLC PDA eλ & 2998 256.46 ± 1.5 nm 378.914 ± 1.5 nm 521.40 ± 1.5 nm		
		257 379 522	HPLC UV/Vis 255 ± 2 nm 379 ± 2 nm 522 ± 2 nm	✓	
8.	Verification Test (If needed)	0.4 %	≤ 1.0 % RSD Area	✓	



No.	Problem Identification
-	Lamp hour more than 4000 H (* writers Recommended = 2000H)

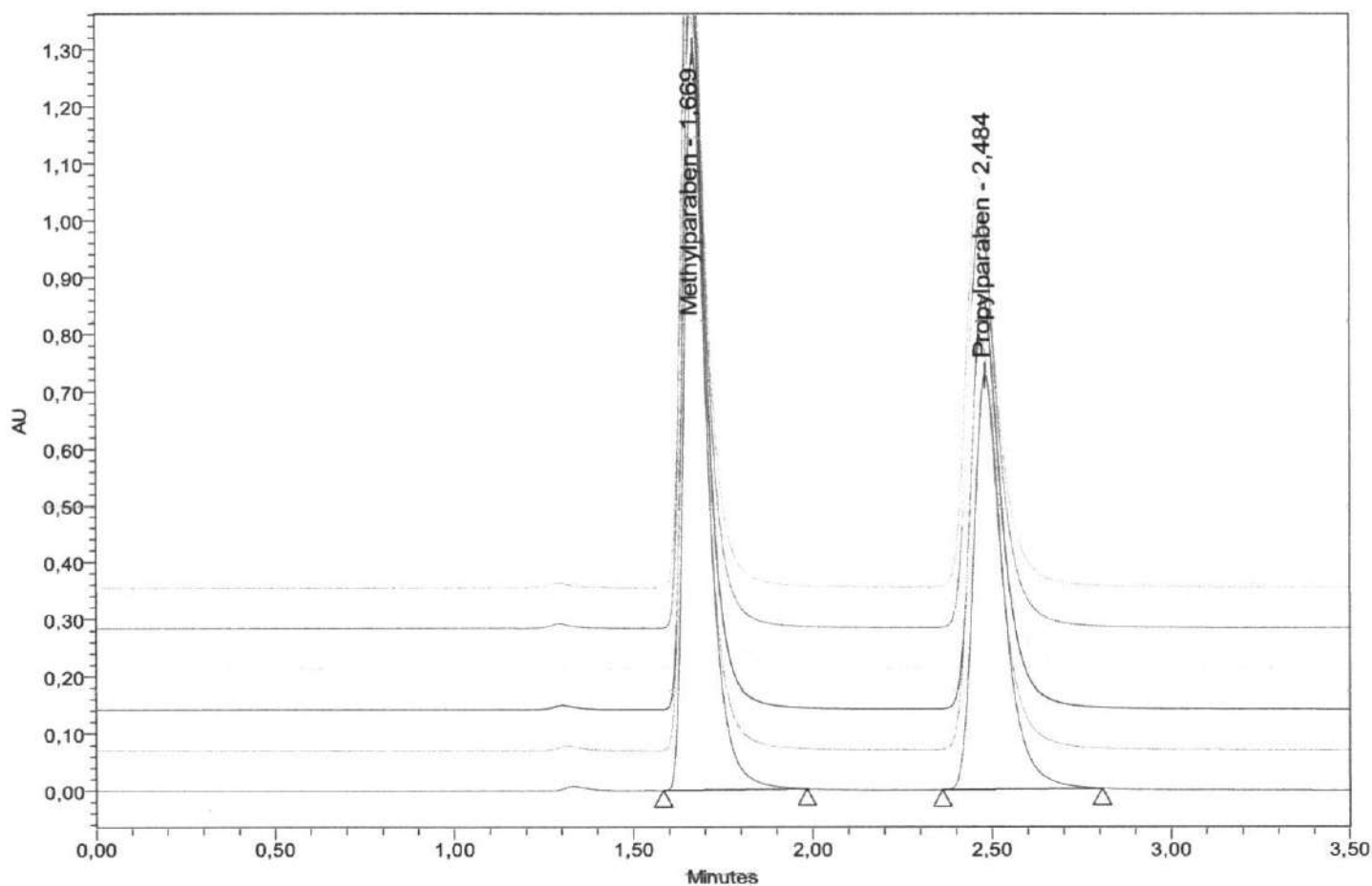
No.	Recommendation
-	uv Lamp.

Customer,

(Ita)

Engineer,

(A.H. Toqbi)



Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 10:09:11 WIB;	Vial: 40; Injection:
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 10:13:27 WIB;	Vial: 40; Injection:
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 10:17:44 WIB;	Vial: 40; Injection:
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 10:21:58 WIB;	Vial: 40; Injection:
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 10:26:11 WIB;	Vial: 40; Injection:
Sample Name: Repro Maintenance;	Date Acquired: 19/05/2026 10:30:26 WIB;	Vial: 40; Injection:

Peak Summary with Statistics

Name: Methylparaben

	Sample Name	Vial	Inj	Name	Retention Time (min)	Area
1	Repro Maintenance	40	1	Methylparaben	1,663	5822610
2	Repro Maintenance	40	1	Methylparaben	1,666	5859706
3	Repro Maintenance	40	1	Methylparaben	1,663	5836111
4	Repro Maintenance	40	1	Methylparaben	1,669	5814766
5	Repro Maintenance	40	1	Methylparaben	1,662	5822648
6	Repro Maintenance	40	1	Methylparaben	1,663	5863000
Mean					1,7	5836473,5
Std. Dev.					0,0	20484,6
% RSD					0,2	0,4

Peak Summary with Statistics

Name: Propylparaben

	Sample Name	Vial	Inj	Name	Retention Time (min)	Area
1	Repro Maintenance	40	1	Propylparaben	2,470	4247300
2	Repro Maintenance	40	1	Propylparaben	2,465	4245939
3	Repro Maintenance	40	1	Propylparaben	2,466	4243997
4	Repro Maintenance	40	1	Propylparaben	2,473	4280933
5	Repro Maintenance	40	1	Propylparaben	2,484	4234445
6	Repro Maintenance	40	1	Propylparaben	2,478	4268533
Mean					2,5	4253524,6
Std. Dev.					0,0	17479,0
% RSD					0,3	0,4