

► Analysis for Three Pyrethroid Insecticides (Imiprothrin, Deltamethrin and Transfluthrin) in their Raw Materials and their Aerosol Formulations Based on HPLC-Photodiode Array detector as Analytical Tool



By

► Ali Dashti ,Moustafa Khalifa and Hussain Asiri

► Al Sharhan Laboratory For Chemical Testing , Al Sharhan Industries

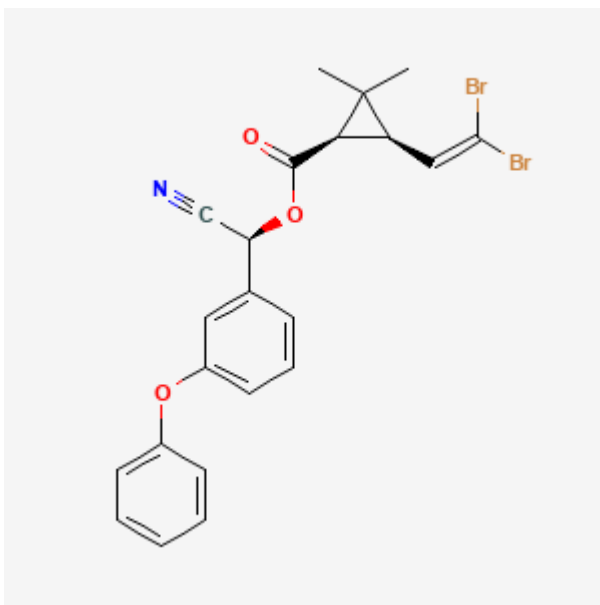
► Building No.59, Block No.1,Intersection of MA3 & MA10,West Shuaiba, KUWAIT

► Web-site: www.alsharhanind.com

► Corresponding Author : Moustafa Khalifa,Tel. +96566643183, Email. drma.moustfa@gmail.com

Deltamethrin

Imiprothrin



Transfluthrin

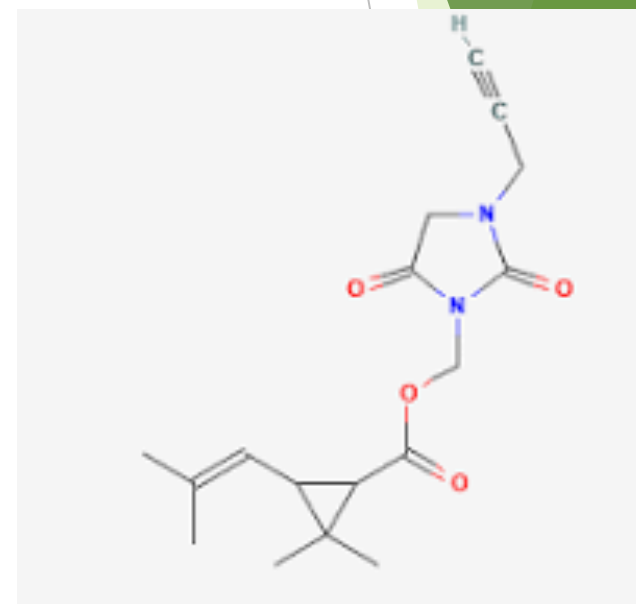
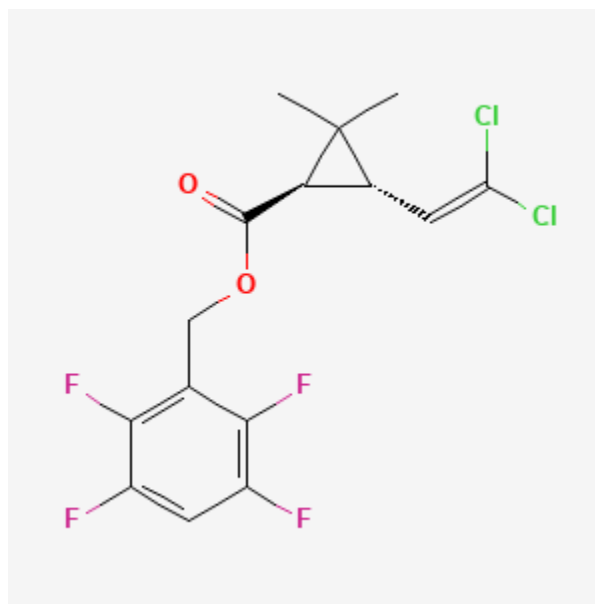


Table (1) : Name of products formulated by Al Sharhan Industries for commercial use, Kuwait

No.	Product name	Active ingredient	Active ingredients concentration(%)
1	Kwik Flying and Crawling Insect Killer, Aerosol	Deltamethrin Transfluthrin Imiprothrin	0.100 0.11 0.063
2	Kwik Fly & Mosquito Killer Odorless Aerosol	Deltamethrin Transfluthrin	0.08 0.27
3	Kwik Double Power Flying Ik, Aerosol	Deltamethrin Transfluthrin	0.08 0.27
4	Kwik Bed Bug Killer , Aerosol	Deltamethrin Imiprothrin	0.1 0.05
5	Kwik Crawling Insect Killer Aerosol	Deltamethrin Imiprothrin	0.05 0.1

210mm



KWIK Flying & Crawling Insect Killer
With striking power that kills flies, Mosquitos, Cockroaches, Ants & other insects.

*** DIRECTIONS FOR USE:**
Cover food and aquarium, shut doors, windows. Spray directly on insects or surface frequented by insects. When used against flying insects as space spray, keep room closed for 10 minutes and vent out before re-entering the room.

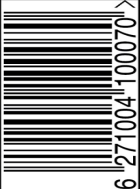
*** CAUTION:**
KEEP OUT OF REACH OF CHILDREN.
Do not spray directly on food.
Do not use near fire or flame or expose to temperatures exceeding 50° C. Do not pierce or burn can, even when empty.
Dispose of empty cans into regular trash or according to state regulations.
For production and expiry date see bottom of the can.

FIRST AID:
• In case of inhalation, the injured person is transferred to an open place.
• In case of skin contact, the affected area is washed with soap and water.
• When in contact with eyes, wash with abundant water and refer to the doctor when necessary.
• In case of swallowing, the person should not be given anything by mouth or urged to induce vomiting. The injured person must be taken to hospital.

FORMULA

التركيب الكيميائي	
ترانزفلوثرين	0.110%
إمپروثرين	0.063%
ديلتاميثرين	0.100%
مواد صديقة وادفحة	99.727%

Solvent & Propellant
KT 24hr :100%



6 271004 100070

التجارة AL-SHARHAN
HOUSTING

Product Developed in Cooperation with **MEADCO ENGLAND**

PA.I.L.No.1054B



كويك مبيد الحشرات الطائرة و الزاحفة
KWIK Flying & Crawling Insect Killer

قوة فتاكة
تدوم أكثر
KNOCKDOWN POWER & Long lasting effect
2in1



رقم التسجيل: 570/2018
الكويت:
معدل المحتوي الصافي
Average Net Contents
400ml e مل ٤٠٠

194mm



كوبيك المطور
مبيد الحشرات الطائرة
Improved KWIK Flying Insect Killer

كوبيك المطور مبيد الحشرات الطائرة
ذو قوة فتاكة على الذباب و الناموس و كافة الحشرات الطائرة
طريقة الاستعمال:

• غطي الطعام وأحواض السمك وأغلق الأبواب والنوافذ ثم رش في جميع الاتجاهات والترك الغرفة بإغلاق لمدة ١٠ دقائق وقم بتحويلها قبل الدخول
تحذير:

CAUTION:
KEEP OUT OF REACH OF CHILDREN.

• Do not spray directly on food.
• Do not use near fire or flame or expose to temperatures exceeding 50° C.
• Do not pierce or burn can, even when empty.
• Dispose of empty cans into regular trash or according to state regulations.
• For production and expiry date see bottom of the can.

FIRST AID:
• In the case of inhalation, the injured person is transferred to an open place.
• In case of skin contact, the affected area is washed with soap and water.
• When in contact with the eyes, wash with abundant water and refer to the doctor when necessary.
• In the event of swallowing, the person should not be given anything by mouth, or urged to induce vomiting.
• The injured must be taken to hospital.

FORMULA
Transfluthrin 0.05%
Tetramethrin 0.20%
B-Cyfluthrin 0.10%
PBO 0.50%
Solvent & Propellant 99.15%

التركيب الكيميائي
تتراميثرين
تيترا ميثرين
بي - سيفلوثرين
بيروثينيل بيثوكسيد
مواد مذابة ودافعة

• لا ترش مباشرة على الطعام
• لا تستخدمها قرب النار أو اللهب المكشوف ولا تعرضها لحرارة تزيد عن ٥٠ درجة مئوية
• لا تعرضها للحرارة حتى وهي فارغة.
• تعامل من الغلبة الفارغة بإلقائها بسلة المهملات أو حسب قوانين وإشتراطات الدولة المتواجدة فيها.
• تاريخ الإنتاج والصلاحية:
أنظر أسفل العلبة.

الإسعافات الأولية:
• في حالة الاستنشاق ينقل المصاب لمكان مفتوح
• في حالة ملامسة الجلد يغسل المكان المصاب بالماء والصابون
• وعند ملامسة العين تغسل بالماء الوفير وراجع الطبيب عند الضرورة
• في حالة البلع يجب عدم إعطاء المصاب أي شيء عن طريق الفم وعدم حقه على التقيء.

يجب نقل المصاب إلى المستشفى.
رقم التسجيل:
2014/503
معدل المحتوى الصافي
Average Net Contents
400ml
٤٠٠ مل

قوة فتاكة
تدوم أكثر
KNOCKDOWN
POWER &
Long lasting effect



تركيبة مطورة
IMPROVED FORMULA

KT 24hr : 100%
6 271004 100056

AL SHARHAN
Product Developed in Cooperation with
MEADCO ENGLAND

AL SHARHAN
Product Developed in Cooperation with
MEADCO ENGLAND

63 % C
90 % M

100% Y

100% K

PANTONE 248 CVC

202 mm

201 mm



كويك قاتل بق الفراش
KWIK BED BUG KILLER

Kwik Bed Bug Killer
Pyrethroid insecticide in the form of aerosol, with its advanced formulation, kills bed bugs on contact. With its dual use spray head, it effectively penetrates into cracks, crevices and folds or broad spaces where bed bugs harbor or move about. It is useful in controlling a variety of household pests such as fleas, ants, cockroaches, spiders, ticks, and mites.

USAGE DIRECTIONS:

- Do not allow product to come into contact with people or pets, cover aquariums.
- Remove or cover exposed food, beverages, and drinking water before use.
- Use in well-ventilated areas.
- Spray on inconspicuous area first to test for staining or possible effect on surface.
- Product is able to spray at any angle (even upside down). Spray on surfaces only do not spray into air.
- Use applicator tip to spray into cracks and crevices, or turn the tip down to spray on broad surfaces. Spray until surface is damp, avoid excessive wetting.
- Allow to dry, best practice is to vacuum the area after treatment. For areas which will come in contact with skin (or pets), residual product may be removed by wiping with sponge holding mild detergent in water.

CAUTIONS:

- Keep out of reach of children.
- Do not use near fire or flame or heat.
- Pressurized container. Do not pierce or burn can, even when empty.
- For production date, expiry date and batch number, see bottom of the can.

STORAGE:

- Store product in cool and dry place not exceeding 50° C, away from direct sunlight and heat.
- Dispose of empty cans into regular trash or according to state regulations.

FIRST AID:

- In case of inhalation, the injured person is transferred to an open place.
- In case of skin contact, the affected area is washed with soap and water.
- When in contact with eyes, wash with abundant water and refer to the doctor when necessary.
- In case of swallowing, the person should not be given anything by mouth or urged to induce vomiting. Antidote: A gastric lavage is performed, and the patient is given DIAZEPAM in the event of convulsions and is treated according to symptoms.

WHO Hazard Classification: Class U
Unlikely to present acute hazard
Toxic to bees and fish.

كويك قاتل بق الفراش
مبيد حشري بارتوي على هيئة أيروسول، بتركيبة المتطورة يخلص على بق الفراش باللامسة. يمنع من إلتصاق الأوساخ أو الحشرات أو المبيدات الأخرى في الشقوق والفتحات أو تتدخل فيها. وهو فعال أيضاً في مكافحة مجموعة متنوعة من الآفات المنزلية مثل البزاقات، النمل، والصراصير والعناكب والقراد.

طريقة الاستخدام:

- لا تسمح باستخدام المنتج على البشر أو الحيوانات الأليفة. قم بتغطية الأحواض السمك، السمك، والنباتات.
- استخدم المنتج في مناطق خفية التهوية.
- قم بالنسج مع منطقة غير ظاهرة أولاً واختبر البقع أو الكائنات الحية على المنتج المعامل.
- يمكن الرش من الزوايا أو فوق الأسطح.
- على غرار رش على الأسطح فاقم في رش المنتج في الهواء.
- استخدم الرش في الشقوق والفتحات أو في الشقوق.
- الطرق لأشكال للرش على المنتج المعامل.
- حتى تصبح المنطقة رطبة.
- استمع للجنس بأن يحق كائنات الحية التي تتدخل في المنطقة.
- تجنب الإفراط في استخدام المنتج.
- تفقد العلاج بالنسبة للمناطق التي سوف تتصلب مع وقتها.
- المنتجات الأخرى.
- المنتج للتطبيق عن طريق المسح باستخدام قطعة بلاستيك معقمة.
- تخلص من المنتج.

تحذيرات:

- لا تستخدم المنتج بعيداً عن متناول الأطفال.
- لا تستخدمه بالقرب من النار أو الشمس أو الحرارة.
- العبوة مضغوطة، لا تقم بفتحها أو خرقها حتى عندما تكون فارغة.
- لتاريخ الإنتاج والصلاحيات ورقم التحذير، انظر أسفل العبوة.

يحتوي المنتج في مكان بارد وجاف لا تتجاوز درجة حرارته 50° C، بعيداً عن أشعة الشمس المباشرة.

تخلص من العبوة الفارغة في سلة المهملات العادية أو وفقاً للوائح الدولة.

الإسعافات الأولية:

- في حالة الاستنشاق يتم نقل المصاب إلى مكان مفتوح.
- حالة ملامسة الجلد: يتم غسل المنطقة المصابة بالماء والصابون.
- في حالة ملامسة العينين: اغسلهما بماء غزير وراجع الطبيب عند الضرورة.
- في حالة الابتلاع: يجب عدم إعطاء الشخص أي شيء عن طريق الفم أو حتى على التقيؤ الفوري.
- المساعدة: يتم إجراء عملية غسيل للمعدة.
- ويعطى للمصاب ديازيبام في حالة حدوث تشنجات.
- تستعمل مضخة الصدمة العالمية حسب الخطر.
- قد لا من غير المحتمل أن يشكل خطراً حاداً.
- سام على النحل والاصيد.

ADVANCED BED BUG KILLER

قاتل بق الفراش المتطور

متد المفعول
EXTENDED PROTECTION



اختيار الخبراء
Expert choice

المكونات الفعالة:

Imiprothrin 0.65%
Deltamethrin 0.10%
Other Ingredients: 84.25%
Solvent & Propellant 99.65%

Reg. No.
KUWAIT 612/2021
Oman 114-11-23
معدل المحتوي النقي 2.00 مل
400ml e Average Net Contents

رقم التسجيل:
الكويت 612/2021
عمان 114-11-23
معدل المحتوي النقي 2.00 مل
400ml e Average Net Contents

ASi
AL SHARHAN
(PALL No. 10548)
P.O. Box 424 SAFAT 13005 KUWAIT
In Cooperation with MEADCO ENGLAND

ASi
AL SHARHAN
(PALL No. 10548)
P.O. Box 424 SAFAT 13005 KUWAIT
In Cooperation with MEADCO ENGLAND

ASi
AL SHARHAN
(PALL No. 10548)
P.O. Box 424 SAFAT 13005 KUWAIT
In Cooperation with MEADCO ENGLAND

210mm



KWIK Crawling Insect Killer
With striking power that kills
Cockroaches, Ants & other insects.

DIRECTIONS FOR USE:
Spray directly on crawling insects for immediate killing effects or on surface frequented by insects such as floors, walls and insect hiding places for long term protection. Re-spray after surfaces are washed.

CAUTION:
KEEP OUT OF REACH OF CHILDREN.
Do not spray directly on food.
Do not use near fire or flame or expose to temperatures exceeding 50°C. Do not pierce or burn can, even when empty.

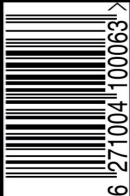
Dispose of empty cans into regular trash or according to state regulations.
For production and expiry date see bottom of the can.

FIRST AID:
• In case of inhalation, the injured person is transferred to an open place.
• In case of skin contact, the affected area is washed with soap and water.
• When in contact with eyes, wash with abundant water and refer to the doctor when necessary.
• In case of swallowing, the person should not be given anything by mouth or urged to induce vomiting. The injured person must be taken to hospital.

FORMULA
Imiprothrin 0.10%
Deltamethrin 0.05%
Solvent & Propellant 99.85%
& Perfume

التركيب الكيميائي
امبيروثرين 0.10%
ديلتاميثرين 0.05%
مواد مذيبية ودافعه وعطر 99.85%

KT 24hr :100%



6 271004 100063

ASIA AL SHARHAN INDUSTRIES
Product Developed in Cooperation with **MEADCO ENGLAND**

PAI.L.No.10548



كويك مبيد الحشرات الزاحفة
KWIK Crawling Insect Killer

قوة فتاكة
تدوم أكثر
KNOCKDOWN POWER & Long lasting effect



الجدول:
لا تترك مبيد الحشرات الزاحفة على الطعام
لا تستعملها قرب النار أو اللهب
المكشوف ولا تعرضها لحرارة تزيد عن 50 درجة مئوية لا تلتصق بالعلبة ولا تعرضها للحرارة حتى وهي فارغة
تخلص من العلبة الفارغة بأمان
بمسلة الموملات أو حسب قوانين وإستراتيجيات الدولة المتواجده فيها
تاريخ الإنتاج والصلاحيه
أنظر أسفل العلبة
الإسعافات الأولية:
• في حالة الاستنشاق يتم نقل المصاب إلى مكان مفتوح.
• في حالة ملامسة الجلد يتم غسل المنطقة المصابة بالماء والصابون.
• في حالة ملامسة العينين اغسلهما بكم غزير وراجع الطبيب عند الضرورة.
• في حالة الابتلاع يجب عدم إعطاء الشخص أي شيء عن طريق الفم أو حثه على التقيؤ. ينقل المصاب إلى المستشفى.

رقم التسجيل: 569/2018
الكويت:
معدل المحتوي الصافي
Average Net Contents
400ml
٤٠٠ مل

194mm

Instrumentation and conditions:

Instrument name	HPLC system. Agilent 1260 11 HPLC system, Agilent Technologies . USA
Injection mode and injection volume	Autosampler/Autoinjector ,1 ul
Pump	Quaternary pump system,
Running time	16.0 min.
Stationary phase and specifications	HPLC column, SS, Ultra Cyano (CN) ,3um (particle size) ,150mm(L)X3mm(ID), 100A⁰(pore size) , (RESTEK, USA)
Column temperature	25°C
Detector	Photodiode Array Detector (PDA)
Mobile phase, composition, elution mode and flow rate	A: Acetonitrile B):phosphoric acid (see preparation in section Chemicals and Reagents) . • Both was filtered with 0.45 um nylon filter and degassed in a sonicator for 10.0min before use • Elution mode is gradient according to the Table (2) • Flow rate :0.6ml/min. •
Soft ware	The output signal was monitored and processed usingAgilent software :Open LAB CDS

Mobile phase composition and programming.

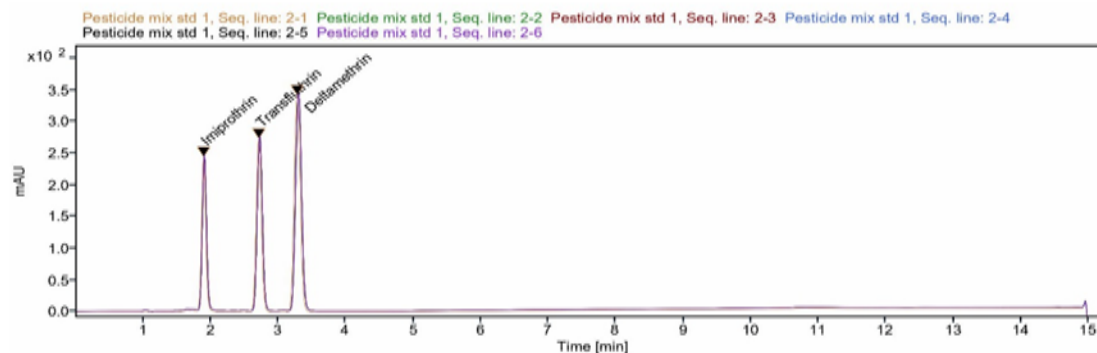
Time in min.	Mobile phase (A) %	Mobile Phase (B) %
0.00	60	40
2.00	60	40
8.00	20	80
12.00	0.0	100
12.00	0.0	100
14.00	60	40
16.00	60	40

Chromatogram resulting from HPLC analysis for SST solution consist of **Imiprothrin**(0.00549 %) **Transfluthrin** (0.00519 %) and **Deltamethrin**(0.00578 %)

Sequence Name:	290621 Pesticide std 1 Repetability	Project Name:	1260
Study:		Acquisition Date:	2021-06-29 12:00:41+03:00
Acquisition User:	SYSTEM		
Instrument:	HPLC		
Method Modified By:	SYSTEM	Manual Integration:	None
Last changed:	2021-06-17 13:48:37+03:00		

STABILITY TEST OVERVIEW

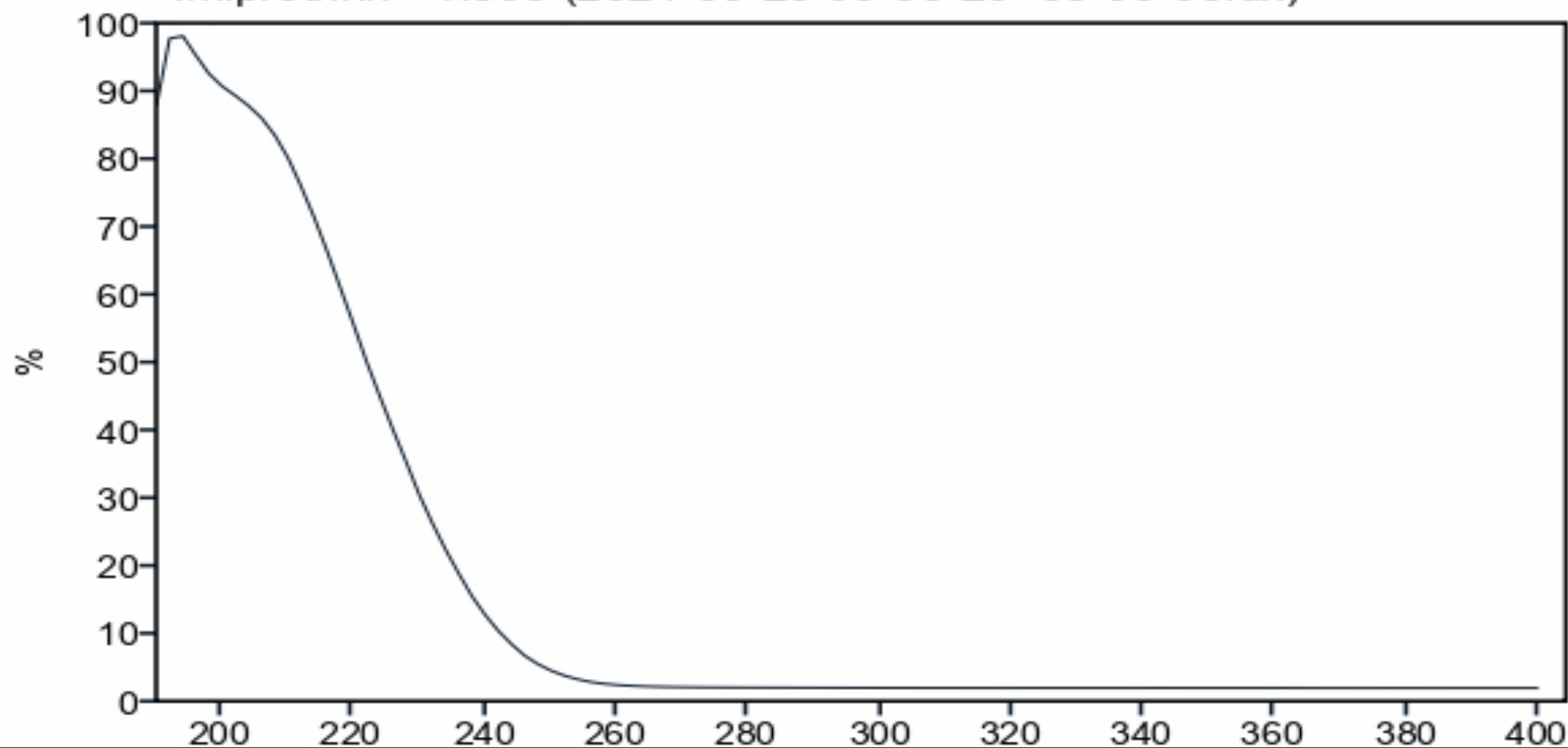
Pesticide mix std 1 sample:



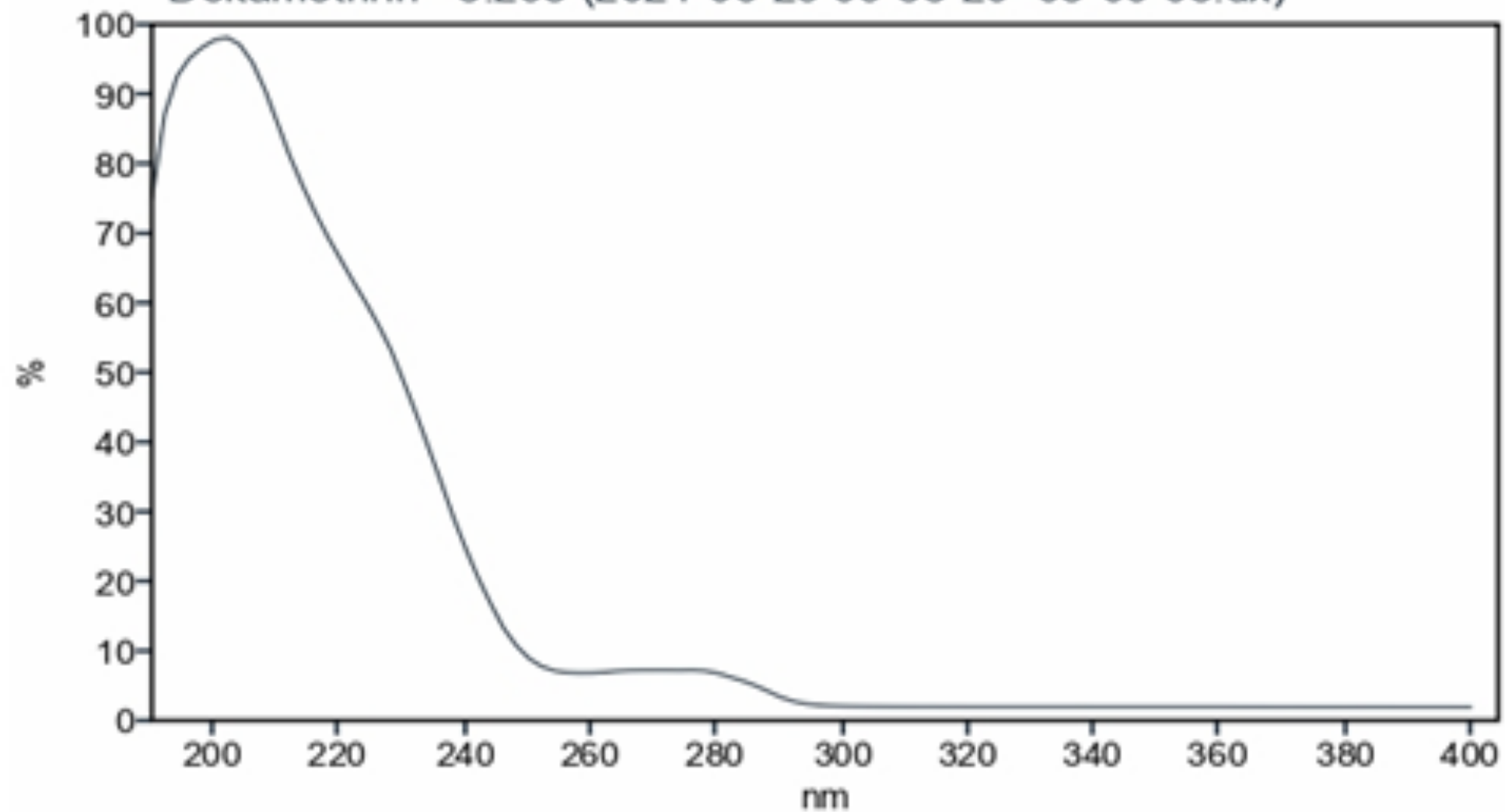
Compound Name	RT avg. (min)	RT RSD (%)	RT stability	Area average	Area RSD (%)	Area stability
Imiprothrin	1.902	0.252	Passed	1076.130	0.404	Passed
Transfluthrin	2.722	0.236	Passed	1482.710	0.167	Passed
Deltamethrin	3.295	0.261	Passed	2159.468	0.167	Passed

RT RSD tolerance: 1.000 % Area RSD tolerance: 2.000 %

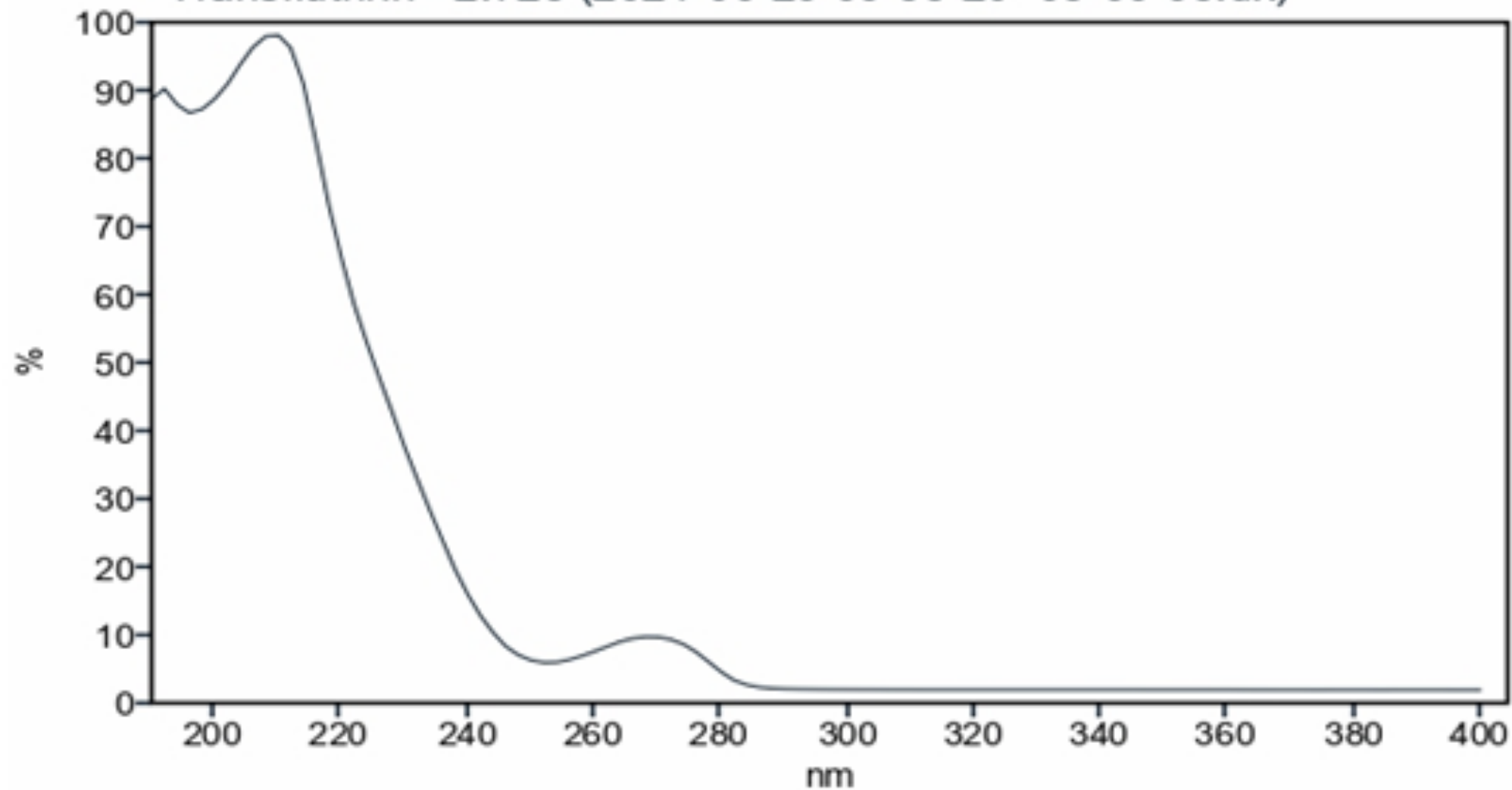
Imiprothrin - 1.898 (2021-06-29 09-53-20+03-00-05.dx)



Deltamethrin - 3.298 (2021-06-29 09-53-20+03-00-05.dx)



Transfluthrin - 2.725 (2021-06-29 09-53-20+03-00-05.dx)

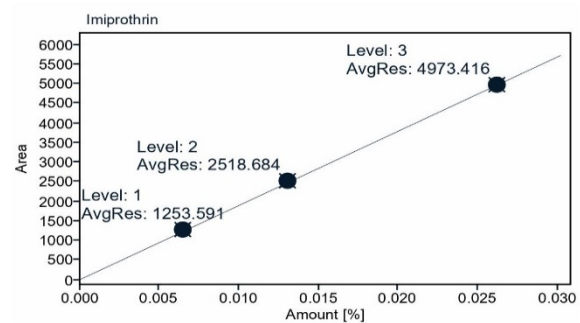


System Suitability test parameters for Imiprothrin ,Transfluthrin and Deltamethrin

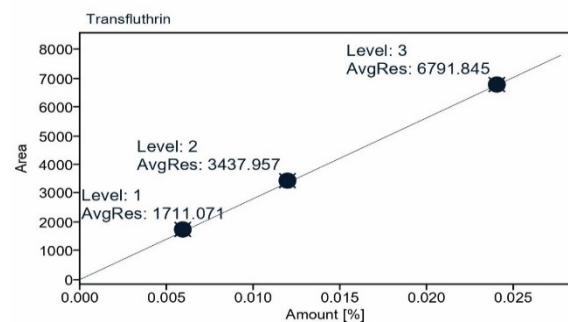
Parameter	Imiprothrin	Transfluthrin	Deltamethrin Obtained value	Reference values ,USP
Column Efficiency (Theoretical Plate Count)(<i>N</i>)(<i>USP</i>)	4093	5474	6171	$N > 2000$
Tailing factor (<i>Tf</i>)	1.112	1.082	1.012	< 2
Average <i>Rt</i> (min.)	1.902	2.722	3.295	
%RSD	0.252%	0.236%	0.261%	$\leq 1 \%$
Average peak area	1076.130	1482.710	2159.468	-
%RSD peak area	0.404%	0.167%	0.167%	$\leq 2\%$
Resolution	-	6.173	3.684	> 1.5

Validation studies

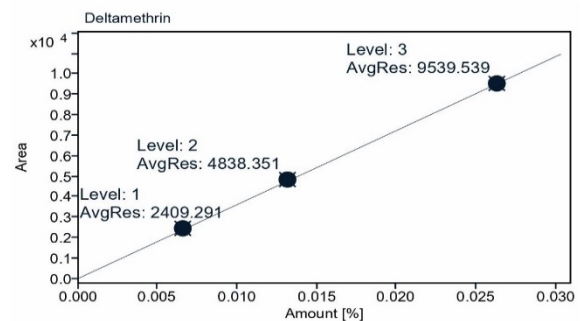
Compound: Imiprothrin
Signal: DAD1A
Exp. RT: 1.885
Corr. Coeff.: 0.999975
Residual STD: 18.46302
RF RSD%:
R^2: 0.99995
Formula: $y = ax + b$
a: 189541.15919
b: 10.49015
c: 0.00000
d:



Compound: Transfluthrin
Signal: DAD1A
Exp. RT: 2.690
Corr. Coeff.: 0.999977
Residual STD: 24.27647
RF RSD%:
R^2: 0.99995
Formula: $y = ax + b$
a: 282420.08612
b: 13.59434
c: 0.00000
d:



Compound: Deltamethrin
Signal: DAD1A
Exp. RT: 3.248
Corr. Coeff.: 0.999968
Residual STD: 39.60579
RF RSD%:
R^2: 0.99994
Formula: $y = ax + b$
a: 361874.40197
b: 23.47857
c: 0.00000
d:



- Summary report for HPLC analytical method validation for analysis of Imiprothrin, Transfluthrin and Deltamethrin

Parameter	Imiprothrin	Transfluthrin	Deltamethrin
R	0.999975	0.999977	0.999967
R ²	0.99995	0.99995	0.99994
LOQ	0.00656	0.00601	0.00650
LOD	0.00219	0.002	0.00219
Linearity range			

Analytical metho accuracy for analysis Of Imiprothrin and Deltamethrin in fortified placebo samples of Kwik Flying & Crawling Insect killer

Compounds	Level of Fortification(%W/W)	%Mean Recovery ⁺
		± % RSD
Imiprothrin	0.025	104.14 ±3.55
	0.055%	100.5 ±1.6
Transfluthrin	0.053 %	107.08 ±3.6
	0.105%	99.08 ±3.6
Deltamethrin	0.052 %	107.14 ±3.55
	0.11%	105.5±1.55

Table (4) : Method Precision (% RSD) for % Recovery for Deltamethrin , Imiprothrin and Transfluthrin from placebo fortified sample (Kwik Crawling & Flying Insect Killer)

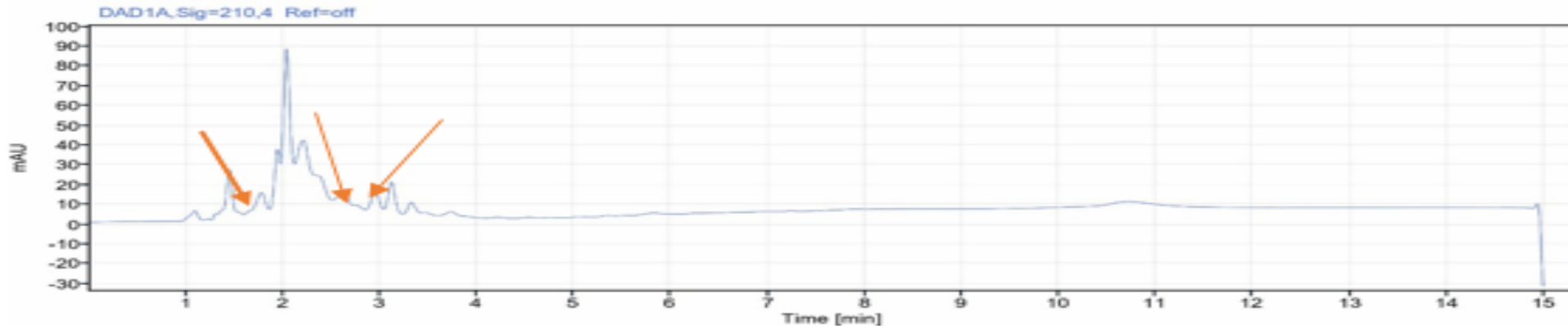
IK	% Recovery & RSD	Precision Inter day			Precision Intra day	Reference Value
		1 st day	2 nd day	3 rd day		
Deltamethrin	% Recovery	103.16	106.78	108.96	103.16	< 2 %
	% RSD	0.13	0.122	0.152	0.13	
Imiprothrin	% Recovery	100.48	103.97	105.27	100.48	< 2 %
	% RSD	0.11	0.083	0.126	0.11	
Transfluthrin	% Recovery	108.96	112.64	114.11	108.96	< 2 %
	% RSD	0.11	0.127	0.162	0.11	

:HPLC Chromatogram for placebo (Matrix Blank)(Kwik Crawling and Flying Insect Killer placebo) ,free from interference at the tR of Imiprothrin(1.902Min. , Transfluthrin (2.722Min.) and



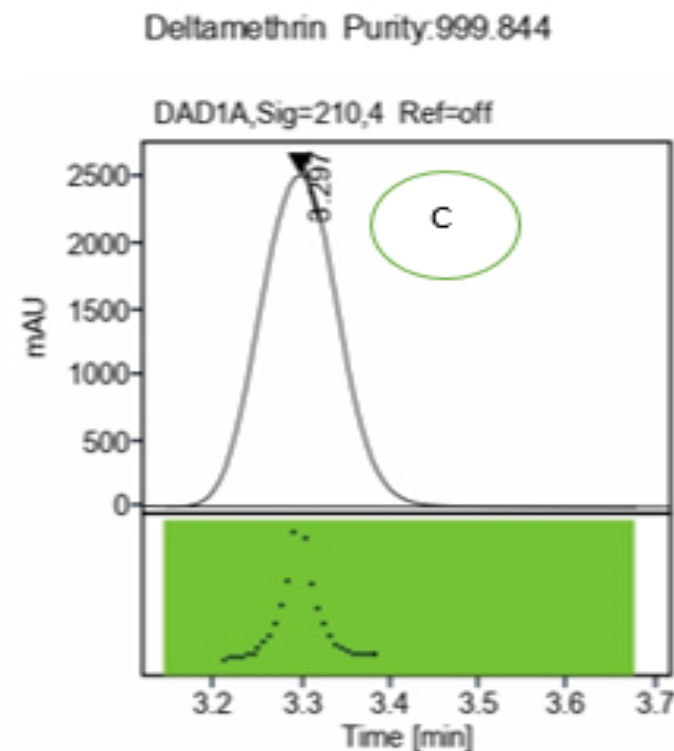
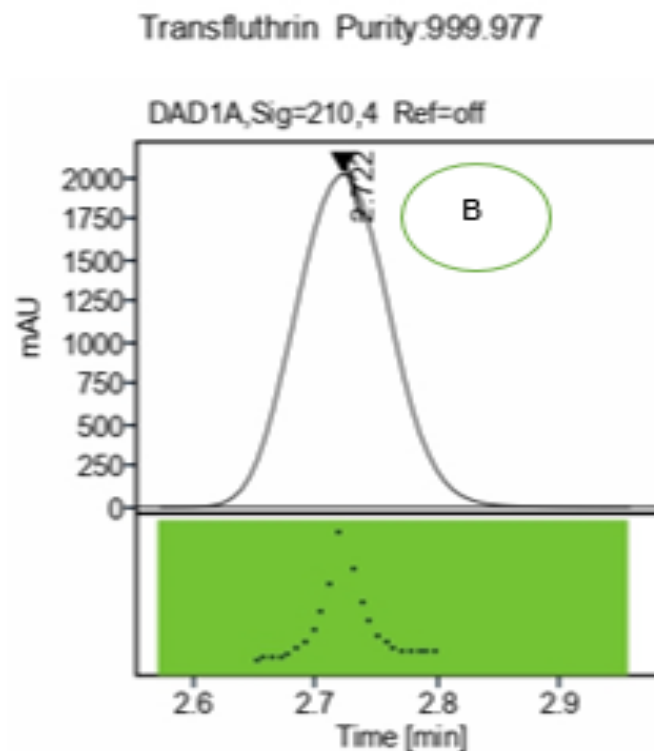
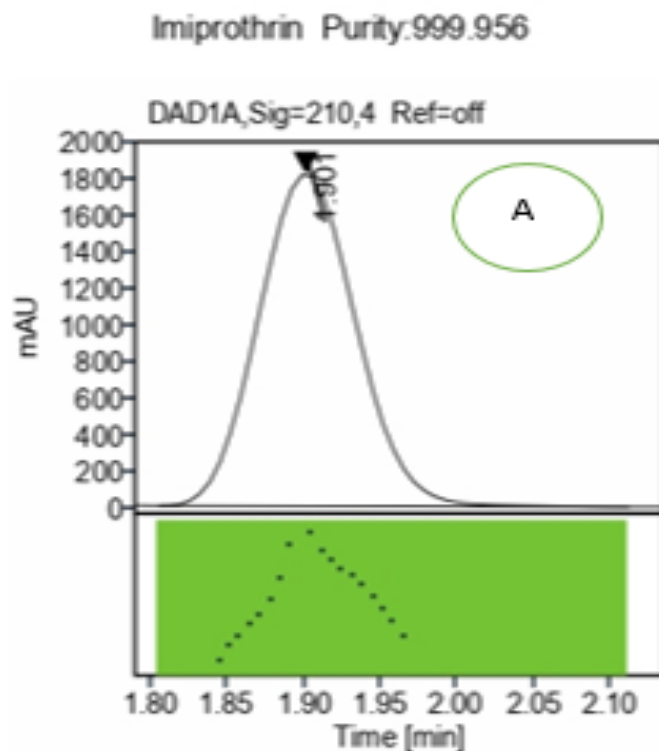
HPLC - Analysis Report

Data file:	2021-07-01 09-03-04+03-00-02.dx	Project Name:	1260
Sequence Name:	010721 Kwik IK placebo Analysis	Operator:	SYSTEM
Sample name:	Kwik AP 2 in1 Placebo 01072021	Injection date:	2021-07-01 09:03:57+03:00
Instrument:	HPLC	Location:	P1-C2
Inj. volume:	5.000	Type:	Sample
Acq. method:	Pesticide Mix std CN column 170621.amx	Sample amount:	0.00
Processing method:	3D UV Pesticide mix std vali 290621.pmx		
Manually modified:	Manual Integration		



Imiprothrin (A) , Transfluthrin(B) and Deltamethrin(C)peak purity resulting from PDA analysis of fortified placebo sample

Purity Details:

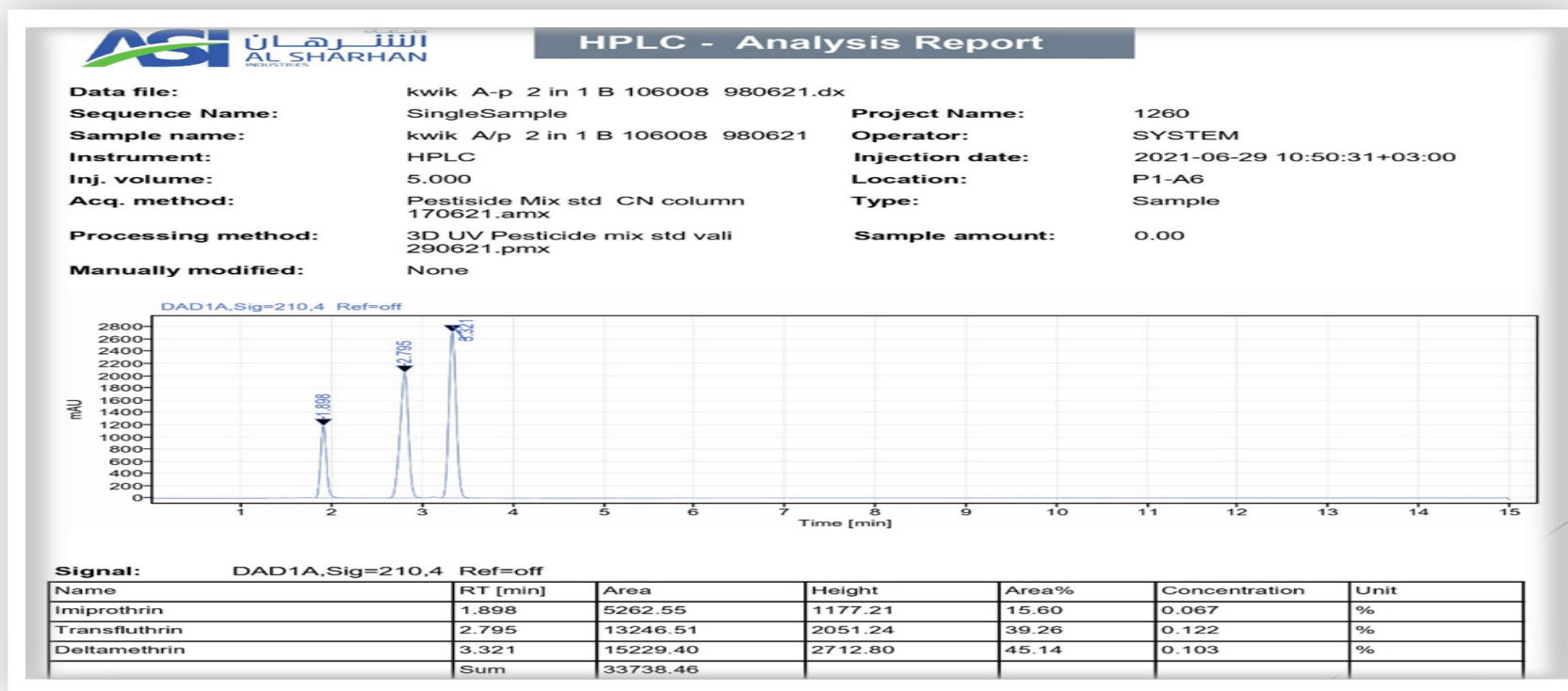


Formulations Analysis

The background of the slide features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side and bottom of the frame, creating a modern, layered effect. The main text, 'Formulations Analysis', is centered horizontally and rendered in a bold, green, sans-serif typeface.

% of Imiprothrin(0.067) [limit according to ASI =0.0567-0.0693%] ,% Transfluthrin (0.122) [limit according to ASI =0.0567-0.0693%] and % Deltamethrin (0.103) [limit according to ASI =0.09-0.11%] in **Kwik Crawling& Flying insect killer**

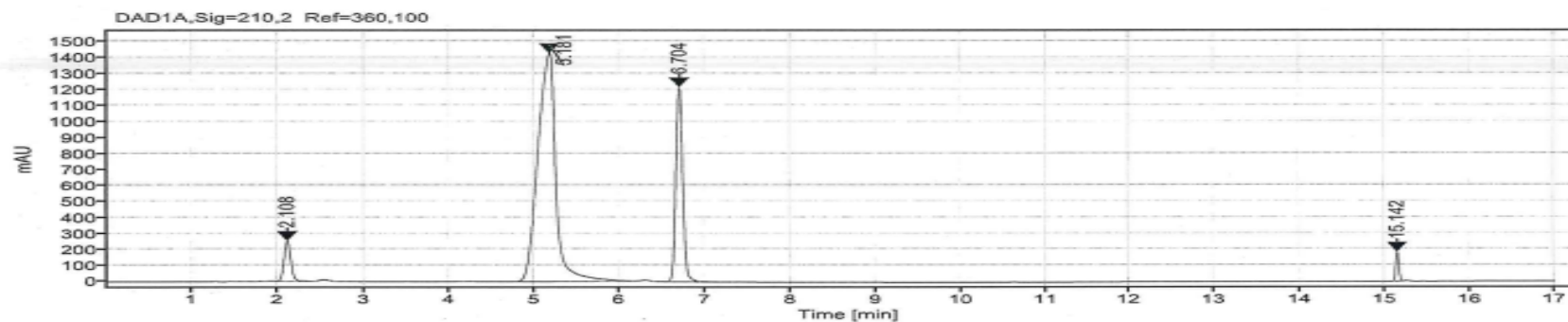
1



HPLC - Analysis Report

Data file: 2024-11-05 18-36-29+03-00-06.dx
Sequence Name: 03032025 ik sample chec
Sample name: Improved kwik flies & mosquito killer odourless
Instrument: HPLC
Inj. volume: 4.000
Acq. method: Pest Transfluthrin CN column 160621.amx
Processing method: 3D UV Pesticide mix std imp, tras, delt 170621.pmx
Manually modified: None

Project Name: 1260
Operator: SYSTEM
Injection date: 2024-11-05 18:37:24+03:00
Location: P1-A2
Type: Sample
Sample amount: 0.00



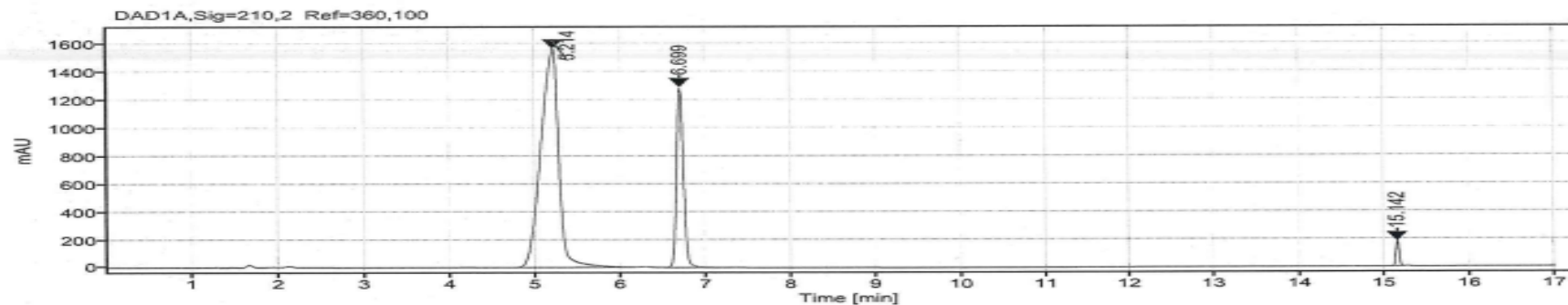
Signal: DAD1A,Sig=210,2 Ref=360,100

Name	RT [min]	Area	Height	Area%	Concentration	Unit
	2.108	1442.84	257.12	4.73		
TRANSLUTHIN	5.181	21501.15	1428.94	70.49	1.190	
DELAMETHRIN	6.704	7045.50	1220.05	23.10	0.318	
	15.142	511.36	187.01	1.68		
Sum		30500.86				

HPLC - Analysis Report

Data file: 2024-11-05 19-17-37+03-00-07.dx
Sequence Name: 03032025 ik sample 2 dp
Sample name: kwik Double Power FlyingInsect Killer
Instrument: HPLC
Inj. volume: 4.000
Acq. method: Pest Transfluthrin CN column 160621.amx
Processing method: 3D UV Pesticide mix std imp, tras, delt 170621.pmx
Manually modified: None

Project Name: 1260
Operator: SYSTEM
Injection date: 2024-11-05 19:18:32+03:00
Location: P1-A2
Type: Sample
Sample amount: 0.00



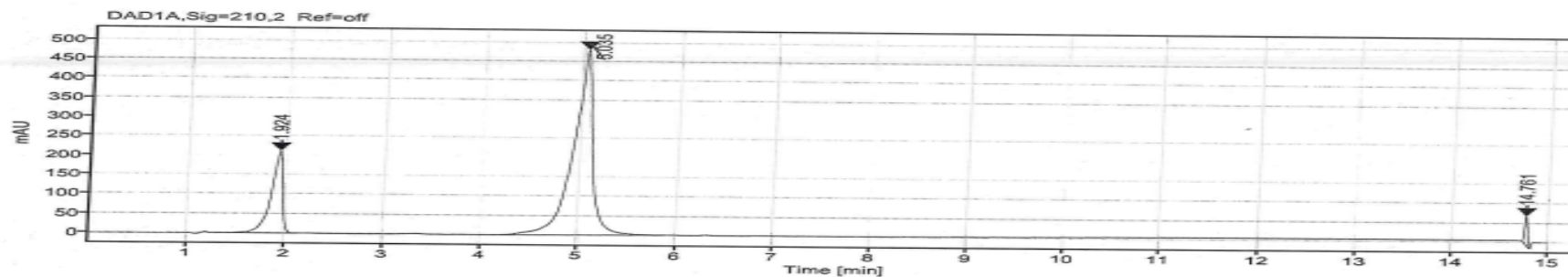
Signal: DAD1A,Sig=210,2 Ref=360,100

Name	RT [min]	Area	Height	Area%	Concentration	Unit
TRANSLUTHIN	5.214	23157.71	1562.91	74.26	1.346	
DELAMETHRIN	6.699	7524.19	1288.75	24.13	0.356	
	15.142	501.93	183.41	1.61		
	Sum	31183.83				

HPLC - Analysis Report

Data file: 2023-11-30 11-48-10+03-00-06.dx
Sequence Name: 30112023 BED BUG B#308001
Sample name: Deltamethrin Transflthrin & imiprthrin mix st1 4ml
Instrument: HPLC
Inj. volume: 5.000
Acq. method: Pesticide ASI CN column 160621 Amnt 191022 RANA.amx
Processing method: 3D UV Pesticide mix std imp, tras, delt 170621.pmx
Manually modified: None

Project Name: 1260
Operator: SYSTEM
Injection date: 2023-11-30 11:49:04+03:00
Location: P1-A4
Type: Sample
Sample amount: 0.00



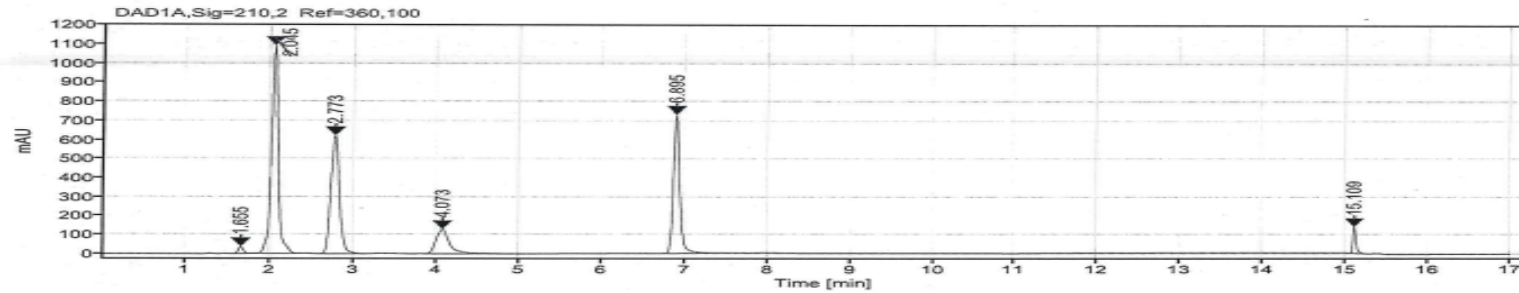
Signal: DAD1A,Sig=210,2 Ref=off

Name	RT [min]	Area	Height	Area%	Concentration	Unit
Imiprothrin	1.924	1744.00	211.03	20.20	0.134	
Deltamethrin	5.035	6715.46	480.01	77.80	0.216	
	14.761	172.30	73.89	2.00		
	Sum	8631.76				

HPLC - Analysis Report

Data file: 2024-10-28 09-47-37+03-00-04.dx
Sequence Name: 03122024 Ik MOH samle cik 410010 3
Sample name: KwIK CIK Mx1006-N B 410010
Instrument: HPLC
Inj. volume: 4.000
Acq. method: Pest Transfluthrin CN column 160621.amx
Processing method: 3D UV Pesticide mix std imp, tras, delt 170621.pmx
Manually modified: None

Project Name: 1260
Operator: SYSTEM
Injection date: 2024-10-28 09:48:32+03:00
Location: P1-A2
Type: Sample
Sample amount: 0.00



Signal: DAD1A,Sig=210,2 Ref=360,100

Name	RT [min]	Area	Height	Area%	Concentration	Unit
	1.655	151.14	37.73	0.88		
	2.045	6440.98	1093.00	37.58		
Imiprothrin	2.773	4588.31	623.23	26.77	0.331	
	4.073	1530.78	129.60	8.93		
Deltamethrin	6.895	4021.19	729.55	23.46	0.126	
	15.109	407.44	139.22	2.38		
	Sum	17139.84				

Raw Materials Analysis

The background features abstract, overlapping green geometric shapes in various shades of green, creating a modern and dynamic visual effect. The shapes are primarily located on the right side of the frame, with some extending towards the left.

HPLC analysis for raw materials

to the ecification

P.T



IPAN
INSTITUTE OF PUBLIC ANALYSTS OF NIGERIA
...Leading for laboratory excellence and development



CERTIFICATE

of participation of

Al Sharhan Lab,

Building No 59, Block No 1, Intersection of MA3 & MA10, West
Shuaiba, Kuwait

in

**Proficiency Testing Round # T011-Chem
for Testing Laboratories**

Organized by

Institute of Public Analysts of Nigeria (IPAN)

In Cooperation with

**United Nations Industrial Development
Organization (UNIDO)-NQIP**

Conducted in Dec 2021 & Jan 2022

**Al Sharhan Lab has satisfactorily participated
in this PT with Lab code as T01**

Please refer to

The report of this PT # T011-Chem, that is issued on 7 Jan 2022

Certificate Issue Date: 7 Jan 2022

Certificate No T01

Mr. Adeyemi Oluwole
Head, Lab Service
IPAN Labs Nigeria

Mr. Stephen Cross
International Accreditation Expert
UNIDO Labs & Capacity Building Expert



Accreditation Certificate No. (022213A)

Arab Republic of Egypt
Egyptian Accreditation Council (EGAC)

Certifies that

Al Sharhan Laboratory for Chemical Testing
Al Sharhan Industries Company W.L.L

Building No. (59) - Block (1) - Intersection of MA3 & MA10
West Shuiba Industrial Area

Kuwait

Has been accredited by EGAC in compliance with the requirements of
ISO/IEC 17025:2017

In Determination of Active Ingredients of Some Insecticides
and Disinfectant Formulation

The scope of accreditation is described in the attached schedule No. (022213B)
Scope Issue No. (01)

Issue No. (01): June 13, 2022

Valid to: June 12, 2026

Subject to continued compliance to the above standard and EGAC requirements
The Laboratory is accredited to issue reports/certificates under EGAC Accreditation
According to the attached scope of accreditation

EGAC is an ILAC MRA Signatory in the Field of Calibration, Testing, Medical Labs,
Proficiency Testing Providers and Inspection Bodies Accreditation

Eng. Hanie El Desouki

EGAC Executive Director



Eng. Ahmed Samir Saleh

Chairman of EGAC
Minister of Trade and Industry

File Home Insert Page Layout Formulas Data Review View Help Acrobat Tell me what you want to do

Paste Cut Copy Format Painter

Arial 11 Bold Italic Underline Text Color Background Color

Wrap Text Merge & Center

General \$ % , .00 0.00

Conditional Formatting Format as Table Cell Styles

Insert Delete Format

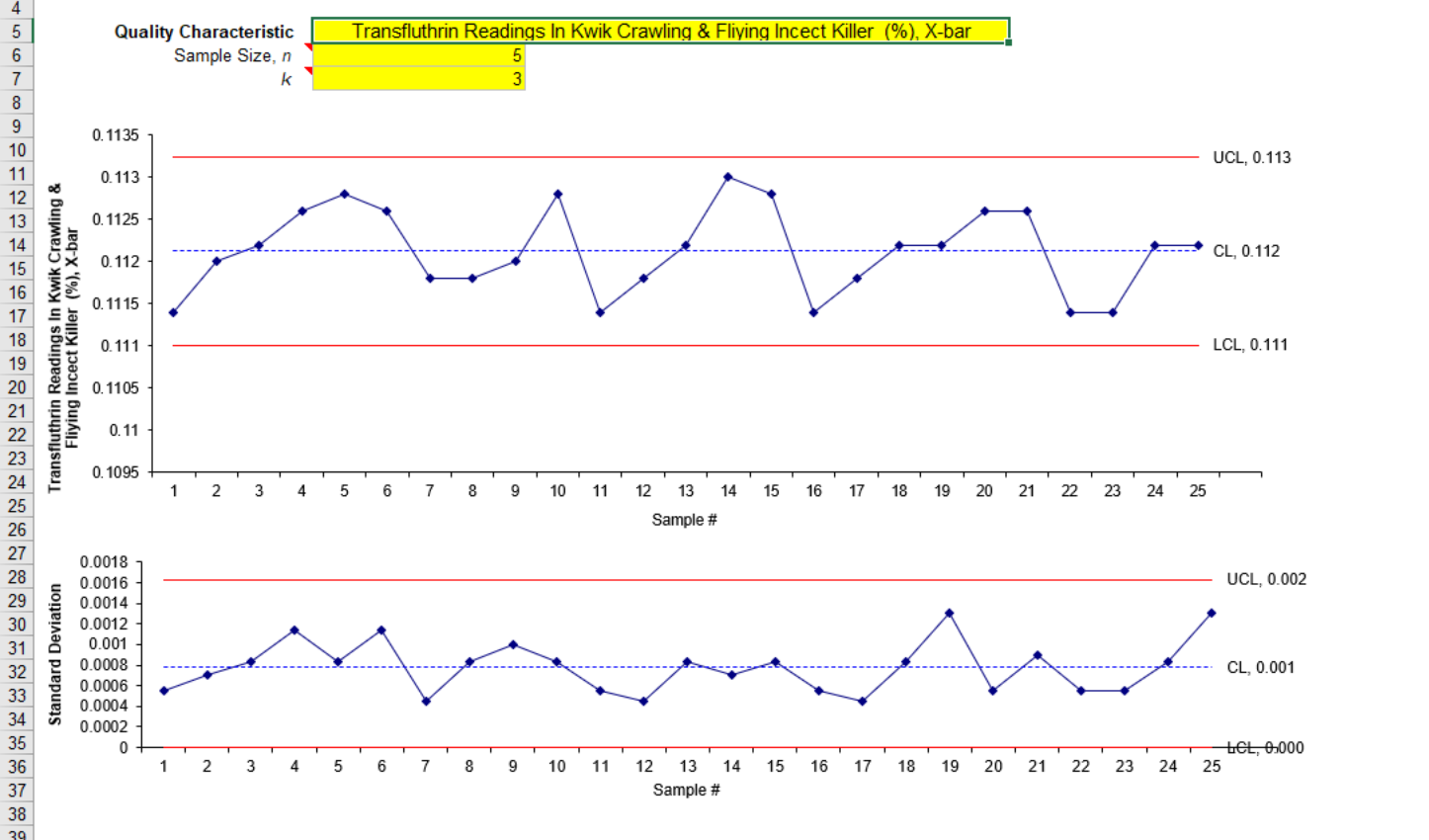
AutoSum Fill Clear Sort & Filter Find & Select

Create a PDF

Clipboard Font Alignment Number Styles Cells Editing Adobe Acrobat

C5 Transfluthrin Readings In Kwik Crawling & Flying Incect Killer (%), X-bar

A B C D E F G H I J K L M N O P Q R S T U



Instructions:

This Control Chart template creates an X-bar Chart and Standard Deviation Chart (s Chart) with control limits calculated from values contained in the data table. All samples are assumed to be the same size.

- Enter the label and the sample size for the quality characteristic that you are monitoring.
- Choose a k -value (typically 3) for setting the control limits.
- Replace the X-bar and St.Dev. values in the Data Table with your own data set (use Paste Special - Values).
- You can delete unused rows in the data table.
- If you need to insert additional rows in the data table, insert rows above the gray line below the table so that series in the chart expand accordingly. Copy the formulas for CL, UCL, and LCL to fill in the blank spaces.
- The labels for CL, UCL, and LCL within the chart are created by selecting the last Data Point and formatting it so that the Data Labels include both the Series name and the Value.

Statistics from Data Table			Process Capability	
s-bar	0.001		Upper Spec Limit, USL	10.4
	0.000		Lower Spec Limit, LSL	9.6

XbarS Data © Terms +

FileHomeInsertPage LayoutFormulasDataReviewViewHelpAcrobatTell me what you want to do

PasteCutCopyFormat PainterClipboard

Arial11Font

Wrap TextMerge & CenterAlignment

GeneralNumber

Conditional FormattingFormat as TableCell StylesStyles

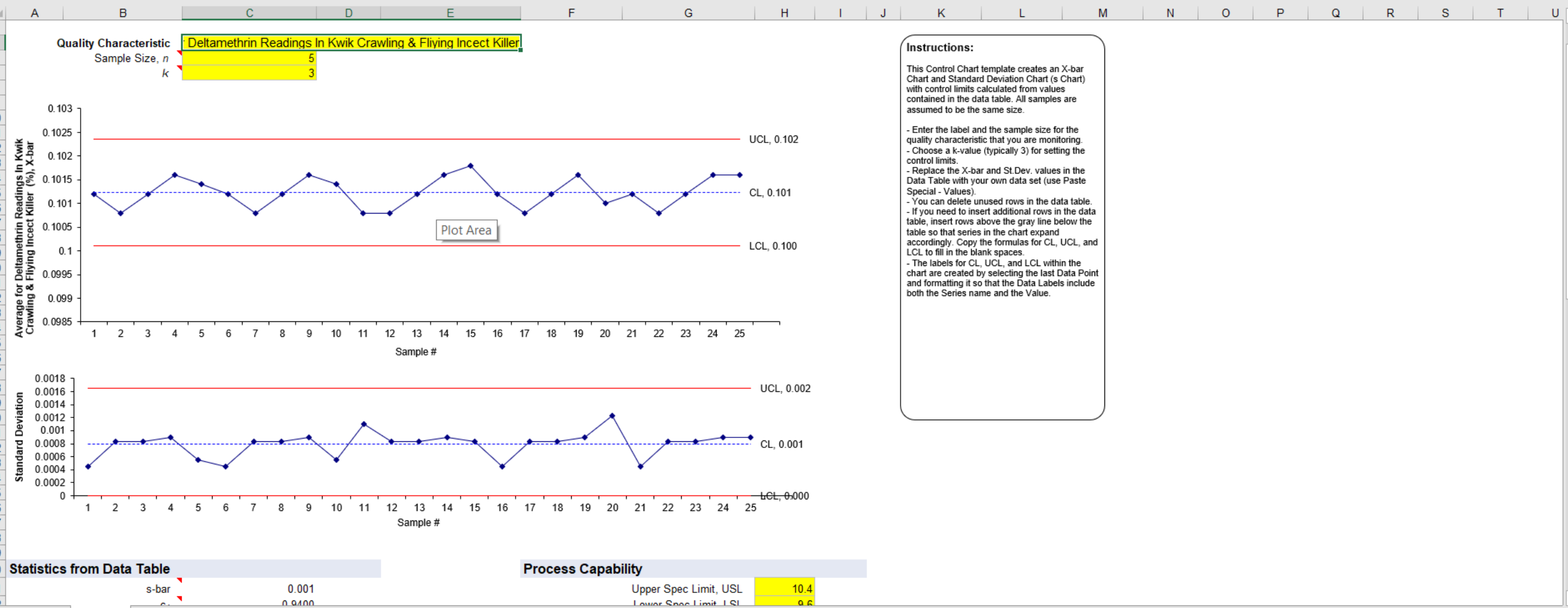
InsertDeleteFormatCells

AutoSumFillClearEditing

Sort & FilterFind & SelectAdobe AcrobatCreate a PDF

C5

Average for Deltamethrin Readings In Kwik Crawling & Flying Insect Killer (%), X-bar



Instructions:

This Control Chart template creates an X-bar Chart and Standard Deviation Chart (s Chart) with control limits calculated from values contained in the data table. All samples are assumed to be the same size.

- Enter the label and the sample size for the quality characteristic that you are monitoring.
- Choose a k-value (typically 3) for setting the control limits.
- Replace the X-bar and St.Dev. values in the Data Table with your own data set (use Paste Special - Values).
- You can delete unused rows in the data table.
- If you need to insert additional rows in the data table, insert rows above the gray line below the table so that series in the chart expand accordingly. Copy the formulas for CL, UCL, and LCL to fill in the blank spaces.
- The labels for CL, UCL, and LCL within the chart are created by selecting the last Data Point and formatting it so that the Data Labels include both the Series name and the Value.

File Home Insert Page Layout Formulas Data Review View Help Acrobat Tell me what you want to do

Paste Cut Copy Format Painter

Arial 12 Bold Italic Underline Text Color Background Color

Align Center Merge & Center

General \$ % ' .00 .00

Conditional Formatting Format as Table Cell Styles

Insert Delete Format

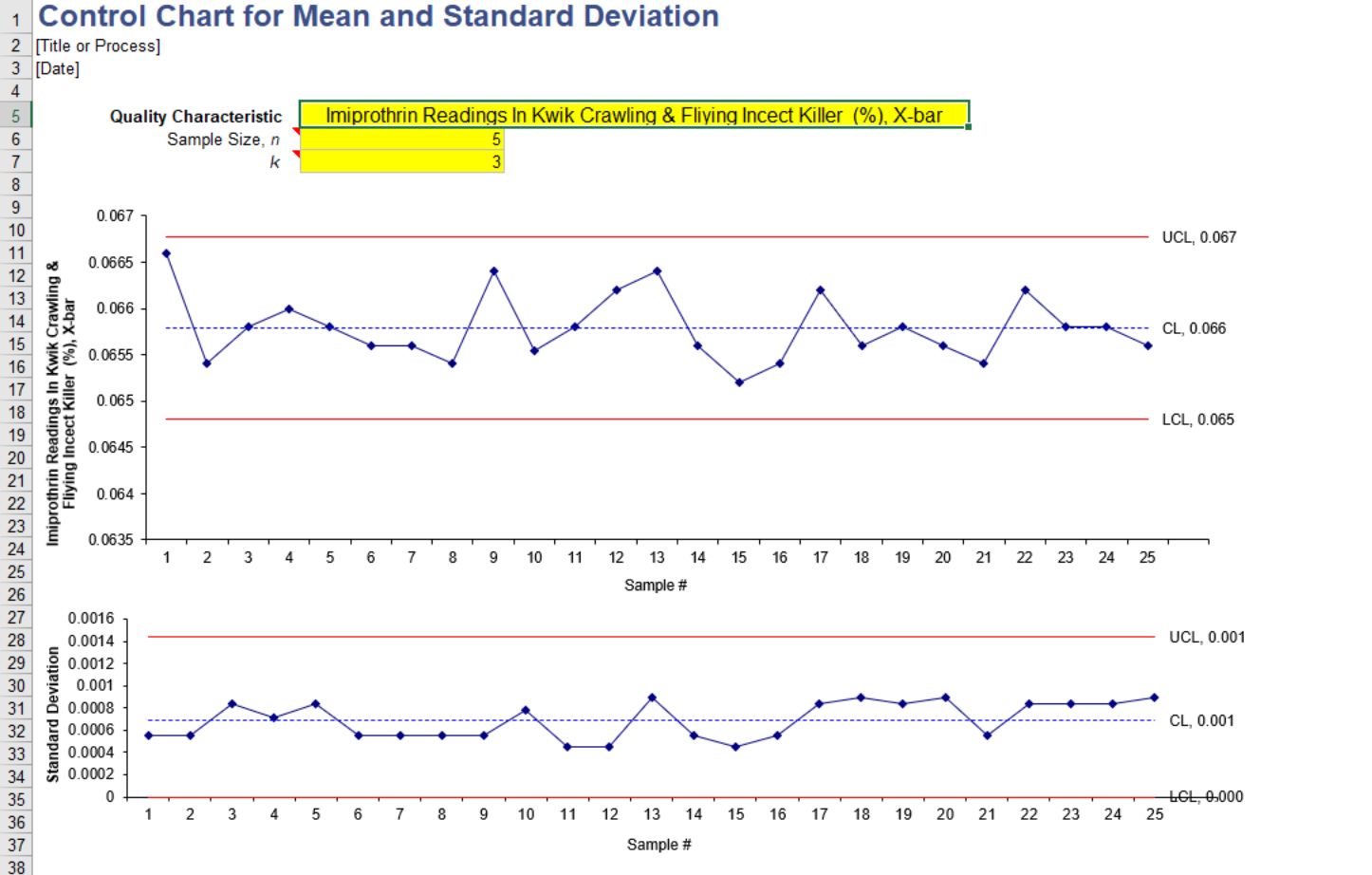
AutoSum Fill Clear Sort & Filter Find & Select

Create a PDF

Clipboard Font Alignment Number Styles Cells Editing Adobe Acrobat

C5 X Imiprothrin Readings In Kwik Crawling & Flying Incect Killer (%), X-bar

A B C D E F G H I J K L M N O P Q R S T U



vertex42
© 2009 Vertex42 LLC
[HELP](#)

Instructions:

This Control Chart template creates an X-bar Chart and Standard Deviation Chart (s Chart) with control limits calculated from values contained in the data table. All samples are assumed to be the same size.

- Enter the label and the sample size for the quality characteristic that you are monitoring.
- Choose a k-value (typically 3) for setting the control limits.
- Replace the X-bar and St.Dev. values in the Data Table with your own data set (use Paste Special - Values).
- You can delete unused rows in the data table.
- If you need to insert additional rows in the data table, insert rows above the gray line below the table so that series in the chart expand accordingly. Copy the formulas for CL, UCL, and LCL to fill in the blank spaces.
- The labels for CL, UCL, and LCL within the chart are created by selecting the last Data Point and formatting it so that the Data Labels include both the Series name and the Value.

Schedule of Accreditation
for Testing Laboratory According to ISO/IEC 17025

Issued To

Al Sharhan industrial laboratory for Chemical Testing
Al-Sharhan Industries

Building No. 59 Block 1 Intersection of MA3 & MA10 - West Shuiba Industrial Area
Kuwait

Schedule No.: 022213B

1st Accreditation Date : June 13, 2022

Issue No. (1); June 13, 2022

Revision No. 0:

Valid to : June 13, 2026

Materials / Products Tested	Types of Tests / Properties Measured / Range of Measurements	Standard Specifications / Techniques Used / Main Device	Standard Specifications / Techniques Used
Insect Killer (IK) Kwik Crawling- IK	Determination of Imiprothrin, and Deltamethrin	In-House validated method based on HPLC- PDA as analytical tool ASI-MV-2021-02-HPLC -2	HPLC- PDA Model : Agilent 1260 S.N DEAC 612188 pH meter Model:seven compact S No 0028671845 Balance: OHAUS S No B510665015 Model: PA4102 Balance: ADAM S No AEAJX 71 Model lab124i
Insect Killer (IK) (aerosol): Kwik Crawling and Flying – IK	Determination of the Imiprothrin Transfluthrin and Deltamethrin		
Deltamethrin Imiprothrin	Assay of Deltamethrin		
	LOQ ppm		
Transfluthrin	Assay of Transfluthrin		

Kornish El-Maadi, Riad El-Maadi Tower 1 - Cairo - Egypt
Tel.: (202) 25275220/5/6/7
Fax: (202) 25275224

F4W14TCL
1 /Dec 2018

Page 2 of 2

Industrial Investment Map: <http://invcegypt.com> في مصر: الخريطة الرسمية للاستثمار الصناعي

كورنيش المعادي - برج رياض المعادي ١ - القاهرة - مصر
تليفون : ٢٥٢٧٥٢٢٠/٥/٦/٧ (٢٠٢)
فاكس : ٢٥٢٧٥٢٢٤ (٢٠٢)

Schedule of Accreditation
for Testing Laboratory According to ISO/IEC 17025
Issued To

Al Sharhan industrial laboratory for Chemical Testing
Al-Sharhan Industries

Building No. 59 Block 1 Intersection of MA3 & MA10 - West Shuiba Industrial Area
Kuwait

Schedule No.: 022213B

1st Accreditation Date : June 13, 2022 Issue No. (1): June 13, 2022

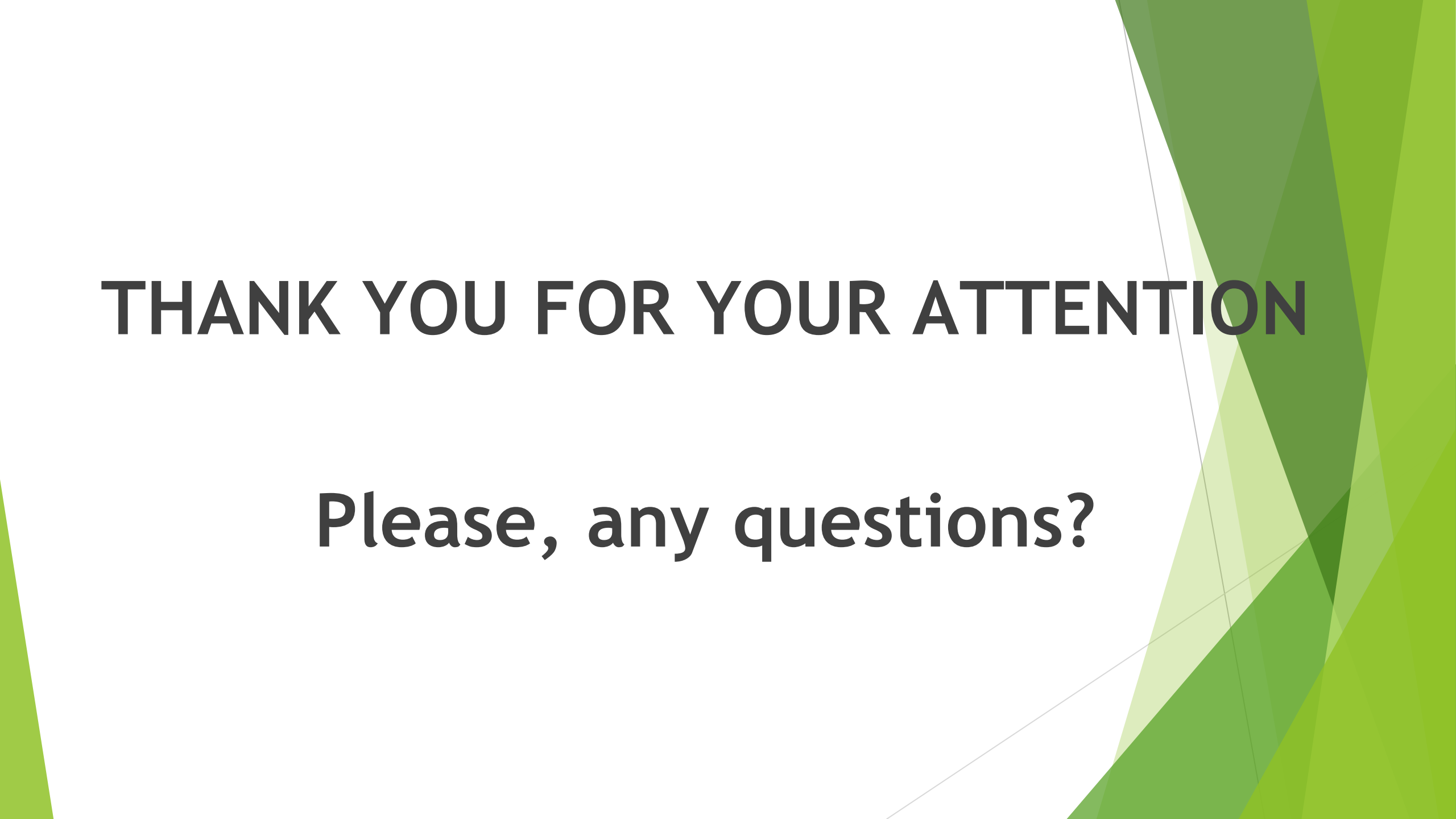
Revision No. (0):

Valid to : June 13, 2026

Materials / Products Tested	Types of Tests / Properties Measured / Range of Measurements		Standard Specifications / Techniques Used / Main Device	Standard Specifications / Techniques Used
Chlorhexidine Digluconate	Assay of Chlorhexidine Digluconate	LOQ ppm	In-House method ASI-MV-2021-01- HPLC -1 based USP 42:2019 In- House Method ASI-MV-2021-01- GC-1 Based on USP 42:2019	HPLC-PDA Model : Agilent 1260 S.N DEAC 612188 GC FID Shimadzu, Nexis GC-2030 Serial S No. C12255806497 pH meter Model:seven compact S No 0028671845 Balance: OHAUS S No B510665015 Model: PA4102 Balance: ADAM S No AEAJX 71 Model lab124i
Ethanol		66		
Kwik Hand Rub (liquid)	Assay of Ethanol	33		
Kwik Surgical Scrub (liquid)	Determination Chlorhexidine Digluconate			

Conclusions:

The method proved to be sensitive, selective, precise, linear, accurate and robust. Also detection and quantification limits (LOD and LOQ) were achieved. Therefore, it could be concluded that this method could be proposed for the quality control process in industry and governmental quality control laboratories. The lower solvent consumption due to short analytical run time (15.0 min.) leads to cost effective chromatographic method and greener analytical chemistry.

The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic look. The shapes are layered, with some appearing more prominent than others, and they extend from the right side of the frame towards the left.

THANK YOU FOR YOUR ATTENTION

Please, any questions?



ASi

PROFILE



صناعات
الشنرهان
AL SHARHAN
INDUSTRIES

Since 1968

Introduction

Al-Sharhan Industries is a manufacturer of Aerosols, Liquid detergents, Medical disinfectant, Perfumes and Oil & Gas chemicals. ASI also is a brands owner, Private label manufacturer, and distributor of multinational brands. Over the years, we have grown and expanded our infrastructure, and the name of Al-Sharhan Industries has become synonymous with products of the highest quality. Al-Sharhan Industries is a Kuwaiti manufacturer that adheres to the highest international standards and, as a result, has obtained prestigious accreditations and certifications.



Our Mission is to improve the well-being of customers and provide a safe and healthy lifestyle. We always aim at maintain a high quality of our products, as well as sustaining the trust our customers have placed in us.

Our Vision is to offer complete lifestyle and hygiene solutions, so there is an ASI product in every home, every school, every commercial entity.

OUR MISSION & OUR VISION

