

安鋒實業股份有限公司

台中市南屯區工業區 24 路 29 號 TEL:886-4-23501155 (代表) FAX:886-4-23507373
E-mail:anvictor@ms45.hinet.net 網站: www.twanfong.com

含 OH 基蓖麻油聚醇樹脂 ALBODUR 941

規格：

固成份	: 約 100 %
黏度	: 約 500 mPas
生質碳含量(以有機碳總量為基礎)	: 70% (後方有相關檢測報告)
OH 價	: 318 mg KOH/g
OH 基含量	: 約 9.64% (供給值)
OH 當量重	: 約 176
酸價	: 約 2 mg KOH/g

成膜規格：

94.5% Albodur 941 + 5.0% Albolith MS C 350 + 0.5% BYK-088 + Suprasec 2496

架橋率 110%。完成後於室溫固化 7 天再進行測試。

物性項目	Shore A 硬度	Shore D 硬度	斷裂伸長率
測試結果	99	78	10 %

特性及應用：

ALBODUR 942 是一支以可再生原料為基礎的含 OH 基蓖麻油聚醇樹脂，無溶劑、**非常硬(似環氧)**，適用具有優異耐化性的一般工業塗料和黏膠。可用於下列應用：

1. 工業地床。
2. 黏膠。
3. 裝飾性地板塗料。
4. 噴塗應用。

ALBODUR 941 與 ALBODUR 942 的差異：

一般來說，蓖麻油及蓖麻油多元醇含有游離脂肪酸的殘留物。此游離脂肪酸對多元醇和異氰酸酯的架橋反應有催化效果，因此若系統中的脂肪酸較少，則反應發生的較慢。

測量多元醇中游離酸的含量即是酸價。與 ALBODUR 941 相比，ALBODUR 942 的酸價較低，因此有更長的操作時間/pot-life。



安鋒實業股份有限公司

台中市南屯區工業區 24 路 29 號 TEL:886-4-23501155 (代表) FAX:886-4-23507373
E-mail:anvictor@ms45.hinet.net 網站: www.twanfong.com

適用的原材料：

- 消泡劑
Efka SI 2008 BYK-A 501 BYK-A 530 Tego Foamex 944
- 流平劑
Efka FL 3745 BYK 320
- 分散劑
DISPERBYK 118 DISPERBYK 2055 DISPERBYK 2155 Efka PU 4063
- 防沉劑
Sylysia 350 Albothix 85-32 RHEOBYK-7410 ET GARAMITE 7303
- 除水劑
Albolith MS C 350 Incozol 2

一般工業地床塗料參考配方 FP 941：

- A 劑：

順序	原材料	比例
1	ALBODUR 941	41.85
2	消泡劑	0.50
3	分散劑	1.00
4	分子篩漿 ALBOLITH MS C 350	6.65
5	填充料	45.0
6	顏料	3.00
7	防沉劑	2.00
總計		100.00

- B 劑：架橋劑

建議 NCO：OH 架橋率 110%：即 100 份 A 劑用 36.75 份硬化劑 Suprasec 5025 或 36.29 份 Suprasec 2496。若要較柔韌撓曲，則用 34.72 份 Suprasec 2642。

- 物性測試：

架橋劑	乾燥條件	硬度 Shore A	硬度 Shore D	斷裂伸長率
Suprasec 2496	室溫×24 小時	>100	76	5%
	50°C×72 小時	>100	85	5%
Suprasec 2642	室溫×24 小時	>100	68	7%
	50°C×72 小時	>100	80	6%

- 應用注意事項：

a. 941 配方用 2496 硬化劑，較硬，pot-life 約 2 小時。

b. 吸水劑 MSC 350 使用前必需攪拌均勻，因分子篩(吸水劑)可能沈降。均勻攪拌至少 30 分鐘。吸水反應至少 24 小時(即 A 劑做好要 24 小時後才加硬化劑)。

安鋒實業股份有限公司

台中市南屯區工業區 24 路 29 號 TEL:886-4-23501155 (代表) FAX:886-4-23507373
E-mail:anvictor@ms45.hinet.net 網站: www.twanfong.com

- c.底材的溫度要比露點(dew point)高 3K。用 C-aguameter 深入 cm 測殘留濕度，要<3%濕度。參考露點溫度與空氣相對濕度。
- d.為了封閉水份及鹼及良好附著力，強烈建議做 primer，可用環氧 primer 或濕氣硬化 1K-PU，例如用 Suprasec2060 或 PR 02。並可曬上乾燥的石英砂來完成附著力要求。
- e. A 劑跟硬化劑混合均勻約 5 分鐘，倒入容器中再混合 3 分鐘(避免混合不均勻)。
- f.若濕度很高時，必須多加 5~10%的吸水劑 ALBOLITH MSC 350 到配方中，同時硬化劑也要重新計算用量。
- g.表面抗塗鴉可用水性 2K-PU(AC 27401)，建議在 ALBODUR 941 施工後 12~24 小時內施工，7 天後完全硬化。

一般工業地床塗料參考配方 FP 941-01：

• A 劑：

順序	原材料	比例
1	ALBODUR 941	30.53
2	分子篩漿液 ALBOLITH MS C 350	7.23
3	分散劑	0.92
4	消泡劑	0.34
5	填充料	30.86
6	顏料	3.50
7	UV 吸收劑 UV-292	0.76
8	ALBODUR 912	24.44
9	催化劑 Fomrez UL 6 (10%溶於 ALBODUR 912)	0.17
10	消泡劑	0.25
11	濕潤劑	1.00
總計		100.00

• B 劑：架橋劑

建議 NCO：OH 架橋率 110%即 100 份 A 劑用 55.30 份不變黃硬化劑 Desmodur N 3600。

極佳溫暖效果的木器底漆 FP 941-05：

• A 劑：

順序	原材料	比例
1	ALBODUR 941	82.5
2	消泡劑	0.4
3	消泡劑	0.4
4	溶劑 MPA	16.7
總計		100.0

• B 劑：架橋劑

建議 NCO：OH 架橋率 110%即 100 份 A 劑用 69.10 份硬化劑 Suprasec 2496。

大陸手機:1350-9624401(技術), 1382-5211745(業務)

安鋒實業股份有限公司

台中市南屯區工業區 24 路 29 號 TEL:886-4-23501155 (代表) FAX:886-4-23507373
E-mail:anvictor@ms45.hinet.net 網站: www.twanfong.com

一般工業地床配方 FP 941-08：

順序	原材料	比例
1	ALBODUR 941	20.00
2	消泡劑 BYK-A 530	0.30
3	分散劑 DISPERBYK-118	0.20
4	分散劑 DISPERBYK-2055	0.30
5	填料 Millisil W8	29.00
6	填料 Millisil W10	29.00
7	顏料 Heubach G 2106	3.00
8	防沉劑 GARAMITE-7303	0.40
9	ALBODUR 941	10.30
10	分子篩漿液 ALBOLITH MS C 350	7.00
11	消泡劑 BYK-A 530	0.50
總計		100.00

*原材料 1~8 預先在高剪切速率下研磨 15 分鐘。

- B 劑：架橋劑

建議 NCO:OH 的架橋率為 110%，即每 100 份配方中添加 26.89 份 SUPRASEC 2496 或 Desmodur VL。

- 物性測試：

架橋劑	乾燥條件	硬度 Shore A	硬度 Shore D	斷裂伸長率
Suprasec 2496	室溫×24 小時	>100	76	5%
	50°C×72 小時	>100	85	5%

包裝：

190kg/桶。

儲存：

未開封原裝桶儲放在 5~30°C 的乾燥環境，保質期自生產日起至少 6 個月。

配方及工業製程相關作業建議事項：

1. ALBODUR 配方的準備作業

一般批量的 ALBODUR 配方中含有 1-2 種須在工廠製備。將配方中 ALBODUR 所需的量由 200 公升原裝鐵桶裝入另一乾淨且乾燥的容器內。配方中其它成份須在攪拌下加入(例如可使用 dissolver)，再混合入製劑中。**如果分子篩漿液(ALBOLITH MS C 350)未使用整桶(120 公升/桶)，請先將欲使用的量在使用前攪拌完全，因為 MS C 350 可能會有沉澱的狀況。待混合 ALBODUR 配方約半小時達混合完全後，將配方液轉儲放至容器內，配方液須靜置至少 24 小時才可進行後續作業。**

*僅可使用已除濕氣的填料和顏料。

*請使用真空攪拌器來達到最佳的性能。

安鋒實業股份有限公司

台中市南屯區工業區 24 路 29 號 TEL:886-4-23501155 (代表) FAX:886-4-23507373
E-mail:anvictor@ms45.hinet.net 網站: www.twanfong.com

2. 基材表面準備作業：

- (1) 基材表面必須是乾淨、乾燥、無粉塵、無油脂的，須移除所有鬆散、脫落的材料，建議使用機械清理器具來處理。
- (2) 須隨時檢測殘餘濕氣含量，基材深度 2 公分內濕氣應小於 3%，建議使用 C-aqua meter 來檢測。
- (3) 基材溫度須控制在比露點高 3°C 的溫度。(相關露點資訊請參考下頁第 8 點)

3. 打底作業(primer)：

強烈建議要進行打底的步驟，如此才能防止鹼性物質及水氣的滲入，以提供後續塗佈有良好的密著性，且建議要打兩次底。下列是建議的底塗配方：

- (1) 1K-PU，例如: SUPRASEC 2060(70% 溶液於 Solvesso 100) 或 SUPRASEC 2416(100% 無溶劑型)
- (2) 2K-PU，例如: ALBODUR 912 以 1:1 比例與 SUPRASEC 9584 混合、架橋來做為底塗。為了達到最佳密著，建議當底塗仍然潮濕時，可將加熱乾燥的石英砂撒在上面。

4. ALBODUR 混合液的製備作業：

在 400rpm 機械攪拌下，緩慢添加所需的硬化劑量至 ALBODUR 配方液中，然後攪拌至配方液達到完全均質。為避免混合液有不均勻的狀況發生，建議將產品移至另一乾淨、乾燥的容器內。

5. ALBODUR 混合液與面塗(例如: AC 27401)的搭配應用：

- (1) 溫度 20°C 下，25-30kg 量(適合塗佈面積約 10-15m²)的 ALBODUR 混合液的可使用期(pot-life)約 45-60 分鐘。ALBODUR 混合液建議使用抹刀或鋸齒抹刀以最小厚度 1.5mm(塗膜厚,相當於約 2.3kg/m²)來塗佈。
- (2) 以 ALBODUR 為塗佈底的自流平地床須用有脫氣的釘滾輪(spike roller)來塗佈，為了視覺美觀，15 分鐘後可將 PVC 色片鋪撒在表面。
- (3) 為了達到不易滑跤的要求，建議在應用 ALBODUR 混合液 15 分鐘後將小石子砂鋪灑在表面，完全硬化後須以刷子將過多的小石子砂清除掉。
- (4) 為了表面的密封性，建議使用以 AC 27401 為主劑的水性 2K 系統面塗(塗膜厚約 150g/m²，可參考配方 FP 27401-04)。AC 27401 面塗需在應用 ALBODUR 的 12-24 小時後才可應用，完全固化需時 7 天。

6. 器具的清理作業：

攪拌器及其他器具可用乙酸丁酯(BAC)或乙酸乙酯(EAC)來清洗乾淨。

7. 安全性操作建議

須避免接觸皮膚和眼睛，建議在操作時配戴適當的防護手套、護目鏡及遵守一般化學品安全操作事項。

安鋒實業股份有限公司

台中市南屯區工業區 24 路 29 號 TEL:886-4-23501155 (代表) FAX:886-4-23507373

E-mail:anvictor@ms45.hinet.net

網站 : www.twanfong.com

8.空氣相對溼度-露點關係資料表

氣溫 (°C) \ 濕度 (%)	45	50	55	60	65	70	75	80	85	90	95
2	-7.77	-6.56	-5.43	-4.4	-3.16	-2.48	-1.77	-0.98	-0.26	0.47	1.2
6	-4.49	-3.07	-2.1	-1.05	-0.08	0.85	1.86	2.72	3.62	4.48	5.38
10	-1.26	0.02	1.31	2.53	3.74	4.79	5.82	6.79	7.65	8.45	9.31
14	2.2	3.76	5.1	6.4	7.58	8.67	9.7	10.71	11.64	12.55	13.36
18	5.9	7.43	8.83	10.12	11.33	12.44	13.48	14.56	15.41	16.31	17.25
20	7.73	9.3	10.72	12	13.22	14.4	15.48	16.46	17.44	18.36	19.18
22	9.54	11.16	12.52	13.89	15.19	16.27	17.41	18.42	19.39	20.28	21.22
24	11.34	12.93	14.44	15.73	17.06	18.21	19.22	20.33	21.37	22.32	23.18
26	13.15	14.84	16.26	17.67	18.9	20.09	21.29	22.32	23.32	24.31	25.16
28	14.96	16.61	18.14	19.38	20.86	22.07	23.18	24.28	25.25	26.2	27.18
30	16.79	18.44	19.96	21.44	23.71	23.94	25.11	26.1	27.21	28.19	29.09
34	20.42	22.19	23.77	25.19	26.54	27.85	28.94	30.09	31.19	32.13	33.11
38	23.97	25.74	27.44	28.87	30.31	32.62	32.78	33.96	35.01	36.05	37.03
40	25.79	27.66	29.22	30.81	32.16	33.48	34.69	35.86	36.98	38.05	39.11
45	30.29	32.17	33.86	35.38	36.85	38.24	39.54	40.74	41.87	42.97	44.03

安鋒實業股份有限公司

台中市南屯區工業區 24 路 29 號 TEL:886-4-23501155 (代表) FAX:886-4-23507373
E-mail:anvictor@ms45.hinet.net 網站: www.twanfong.com



Beta Analytic
TESTING LABORATORY

Beta Analytic, Inc.
4985 SW 74th Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

ISO/IEC 17025:2017-Accredited Testing Laboratory

November 17, 2022

Markus Dimmers
ALBERDINGK BOLEY GmbH
Duesselderferstr. 53
Krefeld
47829
Germany

Dear Mr. Dimmers

Please find enclosed your radiocarbon (C14) report for the material recently submitted. The result is reported as "% Biobased Carbon". This indicates the percentage carbon from "natural" (plant or animal by-product) sources versus "synthetic" (petrochemical) sources. For reference, 100 % Biobased Carbon indicates that a material is entirely sourced from plants or animal by-products and 0 % Biobased Carbon indicates that a material did not contain any carbon from plants or animal by-products. A value in between represents a mixture of natural and fossil sources.

The analytical measurement is cited as "percent modern carbon (pMC)". This is the percentage of C14 measured in the sample relative to a modern reference standard (NIST 4990C). The % Biobased Carbon content is calculated from pMC by applying a small adjustment factor for C14 in carbon dioxide in air today. It is important to note is that all internationally recognized standards using C14 assume that the plant or biomass feedstocks were obtained from natural environments.

Reported results are accredited to ISO/IEC 17025:2017 Testing Accreditation PJLA #59423 standards and all chemistry was performed here in our laboratory and counted in our own accelerators in Miami, Florida.

The international standard method utilized for this analysis is cited under Summary of Results. The standard version used is the latest available as of the date reported (unless otherwise noted). The report also indicates if the result is relative to total carbon (TC) or only total organic carbon (TOC). When interpreting the results, please consider any communications you may have had with us regarding the analysis. If you have any questions please contact us. We welcome your inquiries.

Sincerely,

Chris Patrick
Vice President of Laboratory Operations



安鋒實業股份有限公司

台中市南屯區工業區 24 路 29 號 TEL:886-4-23501155 (代表) FAX:886-4-23507373
E-mail:anvictor@ms45.hinet.net 網站: www.twanfong.com



Beta Analytic
TESTING LABORATORY

Beta Analytic, Inc.
4985 SW 74th Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

ISO/IEC 17025:2017-Accredited Testing Laboratory

Summary of Results - % Biobased Carbon Content
ASTM D6866-22 Method B (AMS) TOC

Certificate Number: 534849645555134514

Validation:

Chris Patrick
Lateral Signature on File

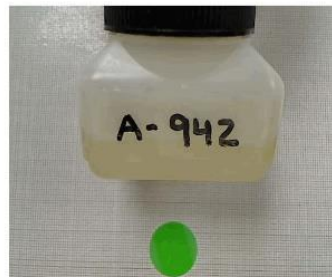
Submitter	Markus Dimmers
Company	ALBERDINGK BOLEY GmbH
Date Received	November 09, 2022
Date Reported	November 17, 2022
Submitter Label	Albodur 942

RESULT: 70 % Biobased Carbon Content (as a fraction of total organic carbon)

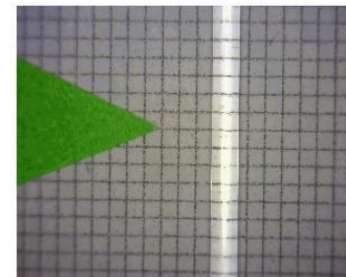
Laboratory Number	Beta-645555
Percent modern carbon (pMC)	69.77 +/- 0.22 pMC
Atmospheric adjustment factor (REF)	100.0; = pMC/1.000



Package received - labeling COC



View of content (1mm x 1mm scale)



Representative sample analyzed (1mm x 1mm scale)

Disclosures: All work was done at Beta Analytic in its own chemistry lab and AMSs. No subcontractors were used. Beta's chemistry laboratory and AMS do not react or measure artificial C 14 used in biomedical and environmental AMS studies. Beta is a C14 tracer-free facility. Validating quality assurance is verified with a Quality Assurance report posted separately to the web library containing the PDF downloadable copy of this report.

Precision on the RESULT is cited as +/- 3% (absolute). The cited precision on the analytical measure (pMC) is 1 sigma (1 relative standard deviation). The reported result only applies to the analyzed material. The accuracy of the RESULT relies on the measured carbon in the analyzed material having been in recent equilibrium with CO₂ in the air and/or from fossil carbon (more than 40,000 years old) such as petroleum or coal. The RESULT only applies to relative carbon content, not to relative mass content. The RESULT is calculated by adjusting pMC by the applicable "Atmospheric adjustment factor (REF)" cited in this report

安鋒實業股份有限公司

台中市南屯區工業區 24 路 29 號 TEL:886-4-23501155 (代表) FAX:886-4-23507373
E-mail:anvictor@ms45.hinet.net 網站 : www.twanfong.com



Beta Analytic, Inc.
4985 SW 74th Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

ISO/IEC 17025:2017-Accredited Testing Laboratory

Summary of Results - % Biobased Carbon Content
ASTM D6866-22 Method B (AMS) TOC

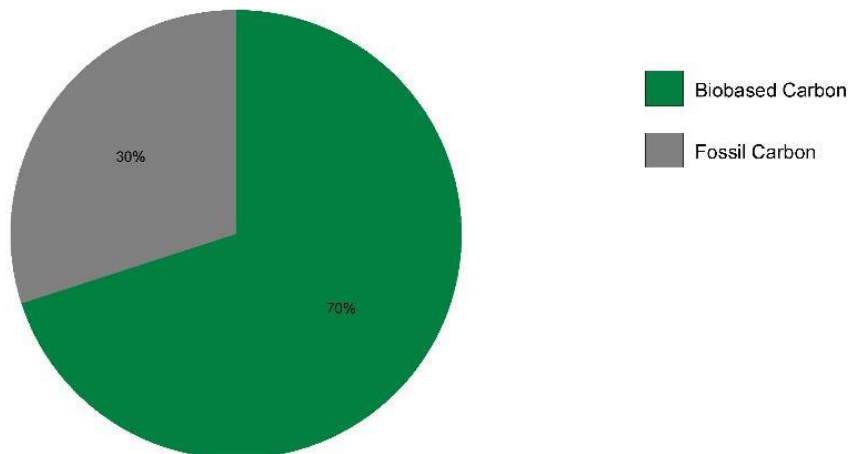
Certificate Number: 534849645555134514

Validation: 

Submitter	Markus Dimmers
Company	ALBERDINGK BOLEY GmbH
Date Received	November 09, 2022
Date Reported	November 17, 2022
Submitter Label	Albodur 942

RESULT: 70 % Biobased Carbon Content (as a fraction of total organic carbon)

Laboratory Number	Beta-64555
Percent modern carbon (pMC)	69.77 +/- 0.22 pMC
Atmospheric adjustment factor (REF)	100.0; = pMC/1.000



Precision on the RESULT is cited as +/- 3% (absolute). The cited precision on the analytical measure (pMC) is 1 sigma (1 relative standard deviation). The reported result only applies to the analyzed material. The accuracy of the RESULT relies on the measured carbon in the analyzed material having been in recent equilibrium with CO₂ in the air and/or from fossil carbon (more than 40,000 years old) such as petroleum or coal. The RESULT only applies to relative carbon content, not to relative mass content. The RESULT is calculated by adjusting pMC by the applicable "Atmospheric adjustment factor (REF)" cited in this report

安鋒實業股份有限公司

台中市南屯區工業區 24 路 29 號 TEL:886-4-23501155 (代表) FAX:886-4-23507373
E-mail:anvictor@ms45.hinet.net 網站: www.twanfong.com



Beta Analytic
TESTING LABORATORY

Beta Analytic, Inc.
4985 SW 74th Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

ISO/IEC 17025:2017-Accredited Testing Laboratory

% Biobased Carbon Content ASTM D6866-22 Method B (AMS) TOC

Explanation of Results

The result was obtained using the radiocarbon isotope (also known as Carbon-14, C14 or 14C), a naturally occurring isotope of carbon that is radioactive and decays in such a way that there is none left after about 45,000 years following the death of a plant or animal. Its most common use is radiocarbon dating by archaeologists. An industrial application was also developed to determine if consumer products and CO₂ emissions were sourced from plants/biomass or from materials such as petroleum or coal (fossil-based). By 2003 there was growing demand for a standardized methodology for applying Carbon-14 testing within the regulatory environment. The first of these standards was ASTM D6866-04, which was written with the assistance of Beta Analytic. Since ASTM was largely viewed as a US standard, European stakeholders soon began demanding an equivalent CEN standard while global stakeholders called for ISO standardization.

The analytical procedures for measuring radiocarbon content using the different standards are identical. The only difference is the reporting format. Results are usually reported using the standardized terminology "% biobased carbon". Only ASTM D6866 uses the term "% biogenic carbon" when the result represents all carbon present (Total Carbon) rather than just the organic carbon (Total Organic Carbon). The terms "% biobased carbon" and "% biogenic carbon" are now the standard units in regulatory and industrial applications, replacing obscure units of measure historically reported by radiocarbon dating laboratories e.g. disintegrations per minute per gram (dpm/g) or radiocarbon age.

The result was obtained by measuring the ratio of radiocarbon in the material relative to a National Institute of Standards and Technology (NIST) modern reference standard (SRM 4990C). This ratio was calculated as a percentage and is reported as percent modern carbon (pMC). The value obtained relative to the NIST standard is normalized to the year 1950 AD so an adjustment was required to calculate a carbon source value relative to today. This factor is listed on the report sheet as the terminology "REF".

Interpretation and application of the results is straightforward. A value of 100% biobased or biogenic carbon would indicate that 100% of the carbon came from plants or animal by-products (biomass) living in the natural environment and a value of 0% would mean that all of the carbon was derived from petrochemicals, coal and other fossil sources. A value between 0-100% would indicate a mixture. The higher the value, the greater the proportion of naturally sourced components in the material.

安鋒實業股份有限公司

台中市南屯區工業區 24 路 29 號 TEL:886-4-23501155 (代表) FAX:886-4-23507373
E-mail:anvictor@ms45.hinet.net 網站: www.twanfong.com



Beta Analytic
TESTING LABORATORY

Beta Analytic, Inc.
4985 SW 74th Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

ISO/IEC 17025:2017-Accredited Testing Laboratory

Quality Assurance Report

This report provides the results of reference materials used to validate radiocarbon analyses prior to reporting. Known-value reference materials were analyzed quasi-simultaneously with the unknowns. Results are reported as expected values vs measured values. Reported values are calculated relative to NISTSRM-1990C and corrected for isotopic fractionation. Results are reported using the direct analytical measure percent modern carbon (pMC) with one relative standard deviation. Agreement between expected and measured values is taken as being within 2 sigma agreement (error x 2) to account for total laboratory error.

Report Date: November 21, 2022
Submitter: Mr. Markus Dimmers

QA MEASUREMENTS

Reference 1

Expected Value: 129.41 +/- 0.06 pMC

Measured Value: 129.36 +/- 0.35 pMC

Agreement: Accepted

Reference 2

Expected Value: 96.69 +/- 0.50 pMC

Measured Value: 97.79 +/- 0.30 pMC

Agreement: Accepted

Reference 3

Expected Value: 0.44 +/- 0.04 pMC

Measured Value: 0.44 +/- 0.04 pMC

Agreement: Accepted

COMMENT: All measurements passed acceptance tests.

Validation:

Chris Patrick
Digital signature on file

Date: November 21, 2022

注意：此為一指導性資料，並不具有約束力，我們建議使用者能在使用之前做有必要的測試，不要把它當做一種直接的替代品，如此才能確保產品適合於指定的應用。

大陸手機:1350-9624401(技術), 1382-5211745(業務)

第11頁，共11頁 (第六版 2024.05)