



UC BACON

Graphene Innovating Your Life

Company Brochure

2023



UC BACON Co. Ltd.

UC Bacon, a graphene manufacture in Taiwan, is dedicated to develop graphene finished products.

- A Graphene Production Plant with Annual Capacity of 100T
- A Graphene Suspension Production Line with Month Capacity of 1T
- Leading Production for Functional Graphene Coating and Graphene Membrane

Our Core Technology

GreenPhene®



UniPerse®



UniTran®



What We Can Provide



Raw Material :

Graphene material produced by Eco-friendly process



Comprehensive Product Portfolio :

Graphene suspension, coating and membrane/film



Technical Support :

Product Co-development, performance testing



Core technology

#1 Graphene Material - GreenPhene®

#2 Graphene Suspension- UniPerse®

#3 Graphene Membrane – UniTran®



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Graphene Innovating Your Life



Direct Continuous Physical Technology

Direct Continuous Physics Technology is a unique dry-typed process for graphene mass production with three features of **eco-friendly, energy saving and highly efficiency.**

- **Direct** – Graphite to Graphene directly
- **Continuous** – Compact production process
- **Physics** – Pure Physical Exfoliation



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Our idea is trying to keep the environment safe while we massively produce the graphene.

No any chemical or solvent would be used in our process.

- No Use For Chemicals
- No Use For Acid And Base Solution
- No Use For Solvent As Reacting Materials



UC Bacon Co. Ltd.
Graphene Innovating Your Life

UC Bacon Company Limited
No. 151, Xinfu Rd., Guanyin Dist., Taoyuan City
32845, Taiwan (R.O.C.)

The following sample was submitted and identified by applicant as:

Sample Description : One sample of graphene powder

Color : Silver Gray

Fiber Content : Carbon

Style No. : DarkPow SP

Applicant : UC Bacon Company Limited

Sample Receiving Date : Feb. 22, 2019

Test Performance Period : Feb. 22, 2019 to Feb. 27, 2019

Test Performed : Selected test(s) as requested by applicant.

Test Results:

EN 71 Part 3:1994 + A1:2000/AC:2002 – Migration of Certain Elements

Method : With reference to EN 71 Part 3:1994 + A1:2000/AC:2002. Analysis was performed by IUP-U663.

Test Item	Result (mg/kg)	Detection Limit (mg/kg)
	1	
Soluble Lead (Pb)	ND	5
Soluble Antimony (Sb)	ND	5
Soluble Arsenic (As)	ND	2.5
Soluble Barium (Ba)	ND	10
Soluble Cadmium (Cd)	ND	5
Soluble Chromium (Cr)	ND	5
Soluble Mercury (Hg)	ND	5
Soluble Selenium (Se)	ND	10

Sample Description :

1. One sample of graphene powder

Note : 1. mg/kg = milligram per kilogram
2. ND = Not Detected
3. Results shown are of the adjusted analytical result

Tested by relevant SGS laboratory.

Test Item	Result (mg/kg)		Detection Limit (mg/kg)
	1		
Soluble Lead (Pb)	ND		5
Soluble Antimony (Sb)	ND		5
Soluble Arsenic (As)	ND		2.5
Soluble Barium (Ba)	ND		10
Soluble Cadmium (Cd)	ND		5
Soluble Chromium (Cr)	ND		5
Soluble Mercury (Hg)	ND		5
Soluble Selenium (Se)	ND		10

Sample Photo



Non detection for the common 8 heavy metal !

This report is valid only for the sample(s) (label) and such sample(s) are retained for 2 months only. This test report cannot be reproduced, except in full, without the written approval of SGS. Any further or other information is available at www.sgs.com and sgs@sgs.com. For electronic format, please refer to the Terms and Conditions of Sale or printed manual, available on request or accessible at www.sgs.com and sgs@sgs.com. Any further or other information is available at www.sgs.com and sgs@sgs.com. The information contained herein reflects the Company's findings at the time of the test. The Company is not responsible for the accuracy of the information contained herein. The information contained herein is a trademark of the Company. Any unauthorized alteration, copying or distribution of this document may be prosecuted to the fullest extent of the law. New Taipei Industrial Park, No. 6, Daxi Rd., New Taipei City, Taiwan. Tel: +886 (0) 2 8210 8888. Fax: +886 (0) 2 8210 8888. www.sgs.com

我們依照客戶的要求,根據申請者送交的樣品進行測試如下:

樣品敘述 : 石墨烯粉體
顏色 : 銀黑色
生產 / 供應商 : 宇興碳素股份有限公司
原產國家 : 台灣
申請者 : 宇興碳素股份有限公司
收件日期 : 2021年07月16日
測試週期 : 2021年07月16日至2021年07月26日

測試要求 : 基於歐洲化學品管理署截止2021年7月8日公佈的供授權審議的高關注物質候選清單(根據歐盟第1907/2006號REACH法規),對219種高關注物質進行篩分測試。

測試方法 : 請參照下一頁

總結 :

根據具體的測試範圍和分析技術,樣品中測試的高關注物質濃度	均 ≤ 0.1%(w/w)。	通過
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台灣檢驗科技股份有限公司

郭靈
主任



The following sample was submitted and identified by applicant as:

Sample Description : Graphene Powder
Color : Silver Gray
Manufacturer : UC Bacon Company Limited
Country of Origin : Taiwan
Applicant : UC Bacon Company Limited
Sample Receiving Date : July 16, 2021
Test Performance Period : July 16, 2021 to July 26, 2021

As requested by client, SVHC screening is performed according to:

Two hundred and nineteen (219) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before July 08, 2021 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and analytical techniques, concentrations of tested SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS
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Remark: Test results have been taken from report number No: TX71387/2021/PL Date: July 26, 2021

Signed for and on behalf of
SGS Taiwan Ltd.

Cherry Kuo

Kuo Ling, Cherry
Supervisor



SGS

測試報告
Test Report

號碼(No.): ETR22306706 日期(Date): 07-Apr-2022 頁數(Page): 1 of 4

宇美發實業股份有限公司 (UC BACON COMPANY LTD.)
桃園市桃園區青島路1490號3樓之3 (3F.-3, NO.1490, CHUNRI RD., TAOYUAN DIST., TAOYUAN CITY30051, TAIWAN(R.O.C))

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by the applicant as):

送樣廠商(Sample Submitted By) : 宇美發實業股份有限公司 (UC BACON COMPANY LTD.)
樣品名稱(Sample Name) : GRAPHENE POWDER(石墨機粉)
樣品型號(Style/Item No.) : GREENPHENE

收件日(Sample Receiving Date) : 29-Mar-2022
測試期間(Testing Period) : 29-Mar-2022 to 07-Apr-2022

測試需求(Test Requested) : 依據客戶指定，測試鹵素-氟、氯、溴、碘。(As specified by client, to test Halogen-Fluorine, Chlorine, Bromine, Iodine in the submitted sample.)

測試結果(Test Results) : 請參閱下一頁 (Please refer to following pages.)


Troy Chang / Department Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei



SGS

測試報告
Test Report

號碼(No.): ETR22306706 日期(Date): 07-Apr-2022 頁數(Page): 2 of 4

宇美發實業股份有限公司 (UC BACON COMPANY LTD.)
桃園市桃園區青島路1490號3樓之3 (3F.-3, NO.1490, CHUNRI RD., TAOYUAN DIST., TAOYUAN CITY30051, TAIWAN(R.O.C))

測試部位敘述 (Test Part Description)

No.1 : 黑色粉末 (BLACK POWDER)

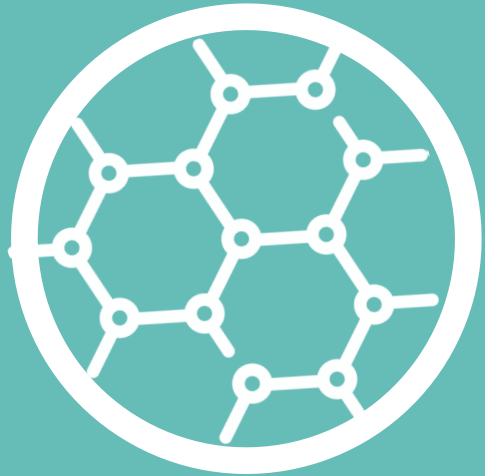
測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-0)	參考BS EN 14582: 2016，以離子層析儀分析。 (With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.
氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537-15-1)	參考BS EN 14582: 2016，以離子層析儀分析。 (With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)	參考BS EN 14582: 2016，以離子層析儀分析。 (With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)	參考BS EN 14582: 2016，以離子層析儀分析。 (With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.

備註(Note):

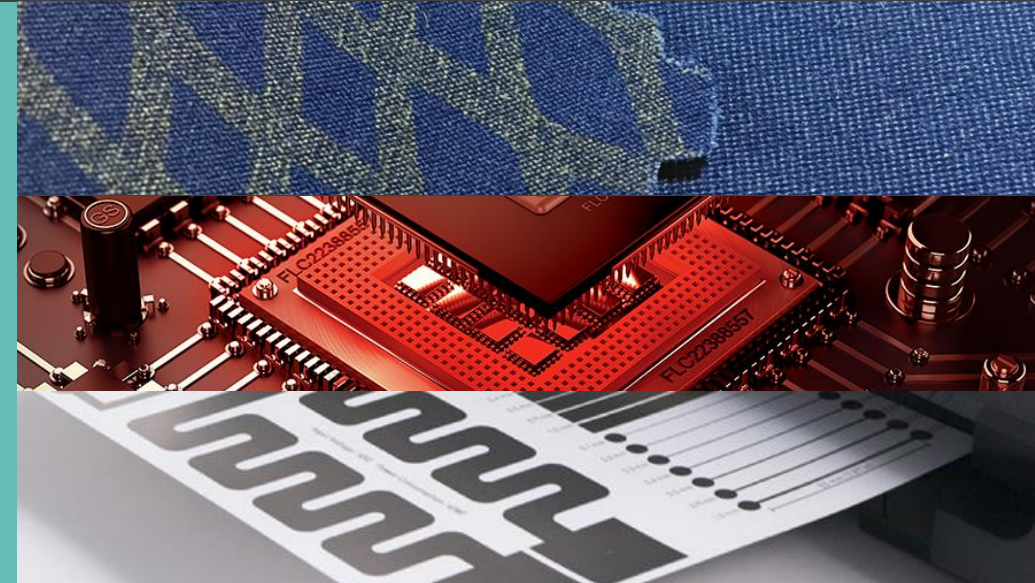
1. mg/kg = ppm; 0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n.d. = Not Detected (未檢出); 小於MDL / Less than MDL

Graphene Suspension



20wt%

Most Concentrated dispersion with good rheology and multiple solvent options



Textile

- ✓ Heat dissipated yarns /Fabrics
- ✓ Water repellent/Anti-bacterial yarns/fabrics
- ✓ Electrical heating/FR heating



Thermal Management

- ✓ Conductive paste/adhesive
- ✓ Thermal radiation coating
- ✓ Heat dissipation film
- ✓ Heat dissipation laminated film



Electrical Conductivity

- ✓ High electrical conductive film
- ✓ EMI shielding film
- ✓ Electrical conductive ink
- ✓ Anti-static coating

We are the “ONLY” 1 manufacture who can provide the concentrated graphene suspensions with graphene content up to 20wt% for both water and organic solvent.

Graphene Suspension : UniPerse®

Item	properties
Appearance	Thick solutions
Transparency	No
Lateral size (μm)	≤ 1.0
Number of layers	≤ 5
Solid content (wt%)	20
Solvent type	Organic solvent and Water
Range of Viscosity (cps)	500-3000
Stable period (days)	> 90



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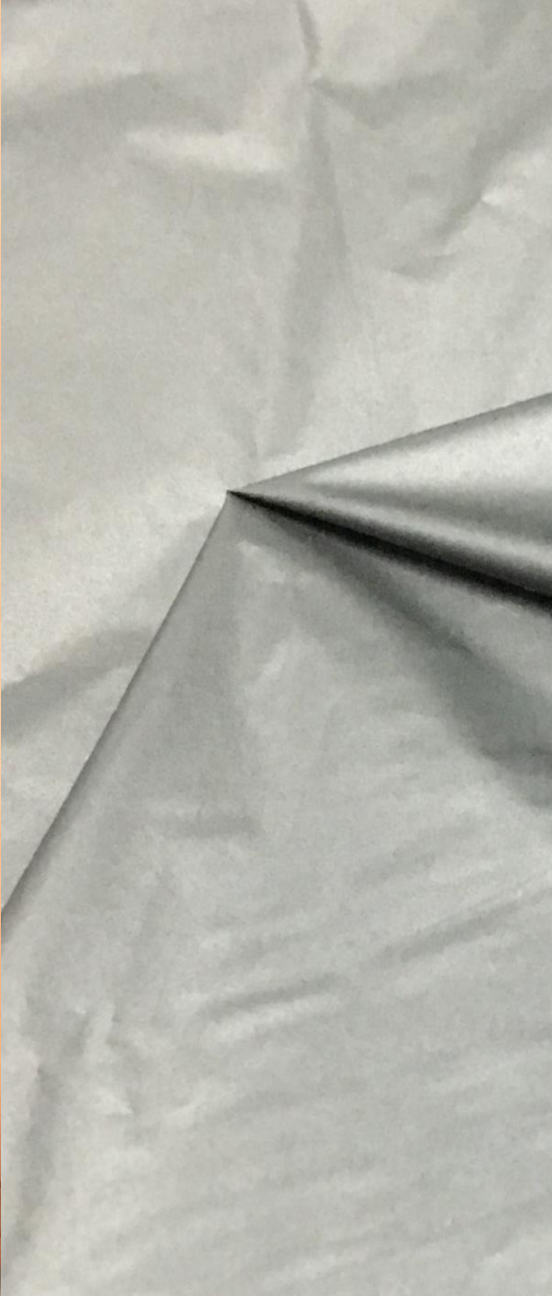
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Core Technology # 3

Graphene Membrane



Heat Spreading



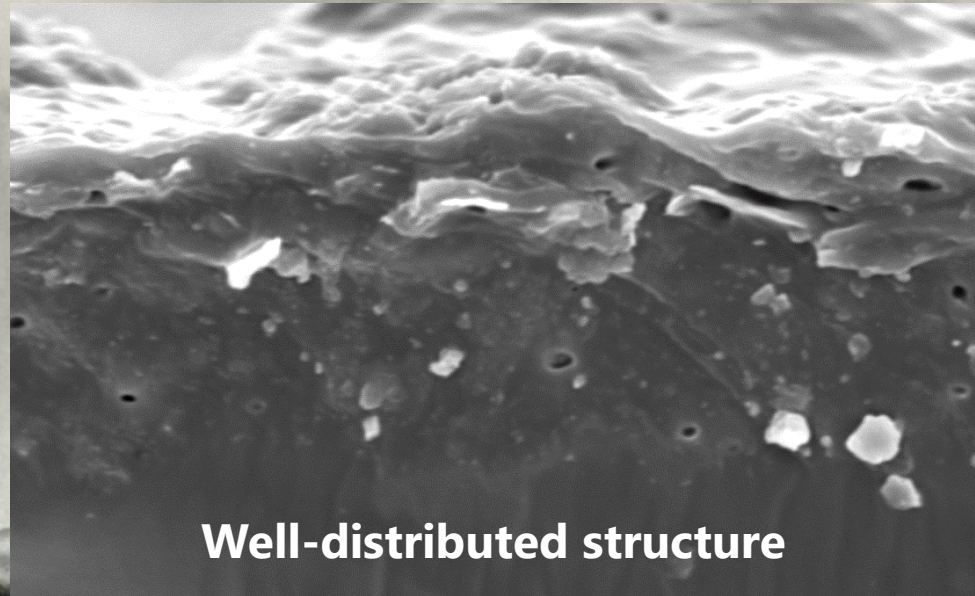
Thermal Comfort



Anti-abrasion

Waterproof Breathable

- Major function on thermal regulation, anti-abrasion.
- Hydrophilic PU, microporous PU and thermal plastic PU are all available.



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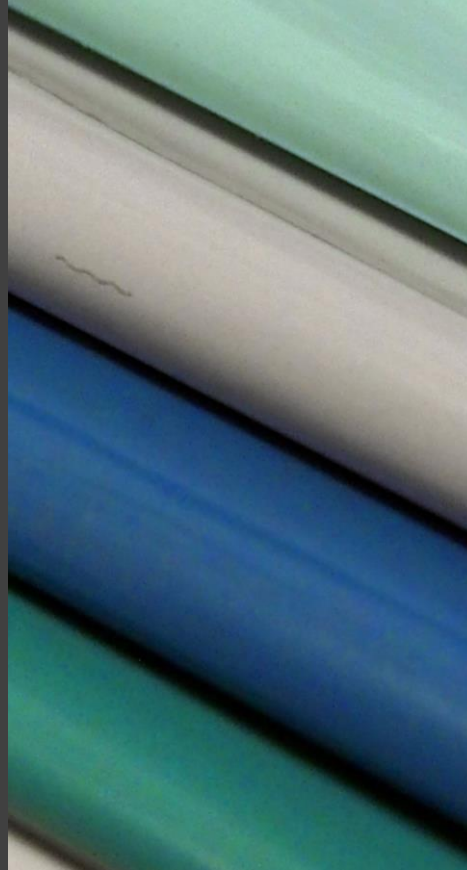
Items	Specific Gravity	Thickness (um)	Moisture Permeability (g/m ² -24hrs)	Water Resistance Test (mmH ₂ O)	Functionality Description
GM-S050	1.3-1.5	18-22	>10000 (JIS L1099 B-1)	> 10000 (JIS L1092)	- Anti-abrasion - Waterproof
GM-S100	1.3-1.5	18-22	>10000 (JIS L1099 B-1)	> 10000 (JIS L1092)	- Waterproof, Breathable - Wearing Comfort
GM-W050	1.3-1.5	18-22	<1000 (JIS L1099 B-1)	> 5000 (JIS L1092)	- Waterproof, Waterborne, Low VOC - Anti-abrasion
GP-P100	1.3-1.5	40-45	>7000 (JIS L1099 A-1)	> 10000 (JIS L1092)	- Waterproof, Breathable - Wearing Comfort
GT-T100	1.3-1.5	25-30	<1000 (JIS L1099 B-1)	> 5000 (JIS L1092)	- Waterproof - Anti-abrasion, Heat Dissipation
EM-050	1.3-1.5	40-45	<1000 (JIS L1099 B-1)	> 5000 (JIS L1092)	- Waterproof - Electrical Conduction, Foldable
LB-200S	1.3-1.5	40-45	<1000 (JIS L1099 B-1)	> 5000 (JIS L1092)	- Waterproof - Light-Blocking, Heat Insulation



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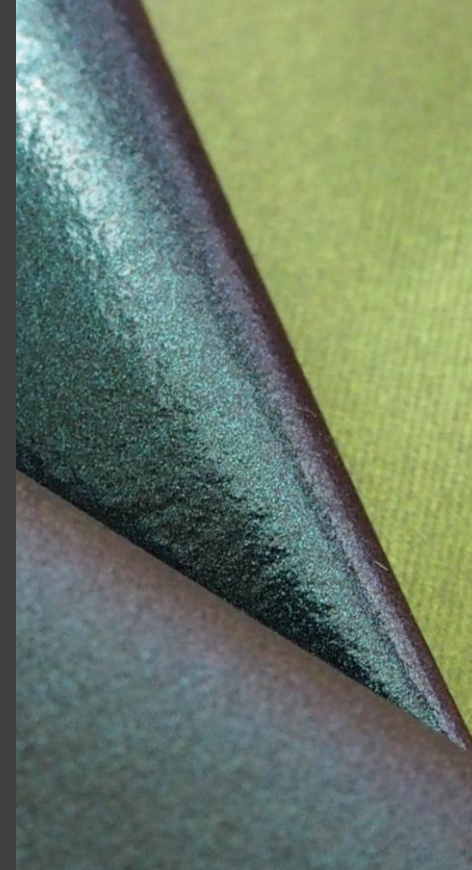
Functional Colorful

- Applicable to hydrophilic PU and TPU
- Mainly for face laminating material
- Waterproof and Anti-abrasion



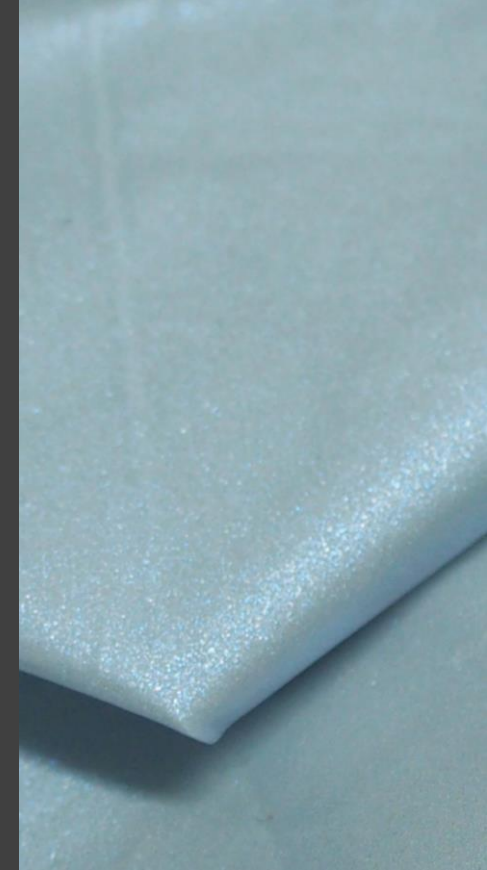
ColorPhene®

Morandi tone and
Metallic shimmer



Iridesma®

Chameleon effect
with multi-tone



Sparkliris®

Pearlescent and
sparkling effect

*Graphene
Innovating Your Life*



Product List

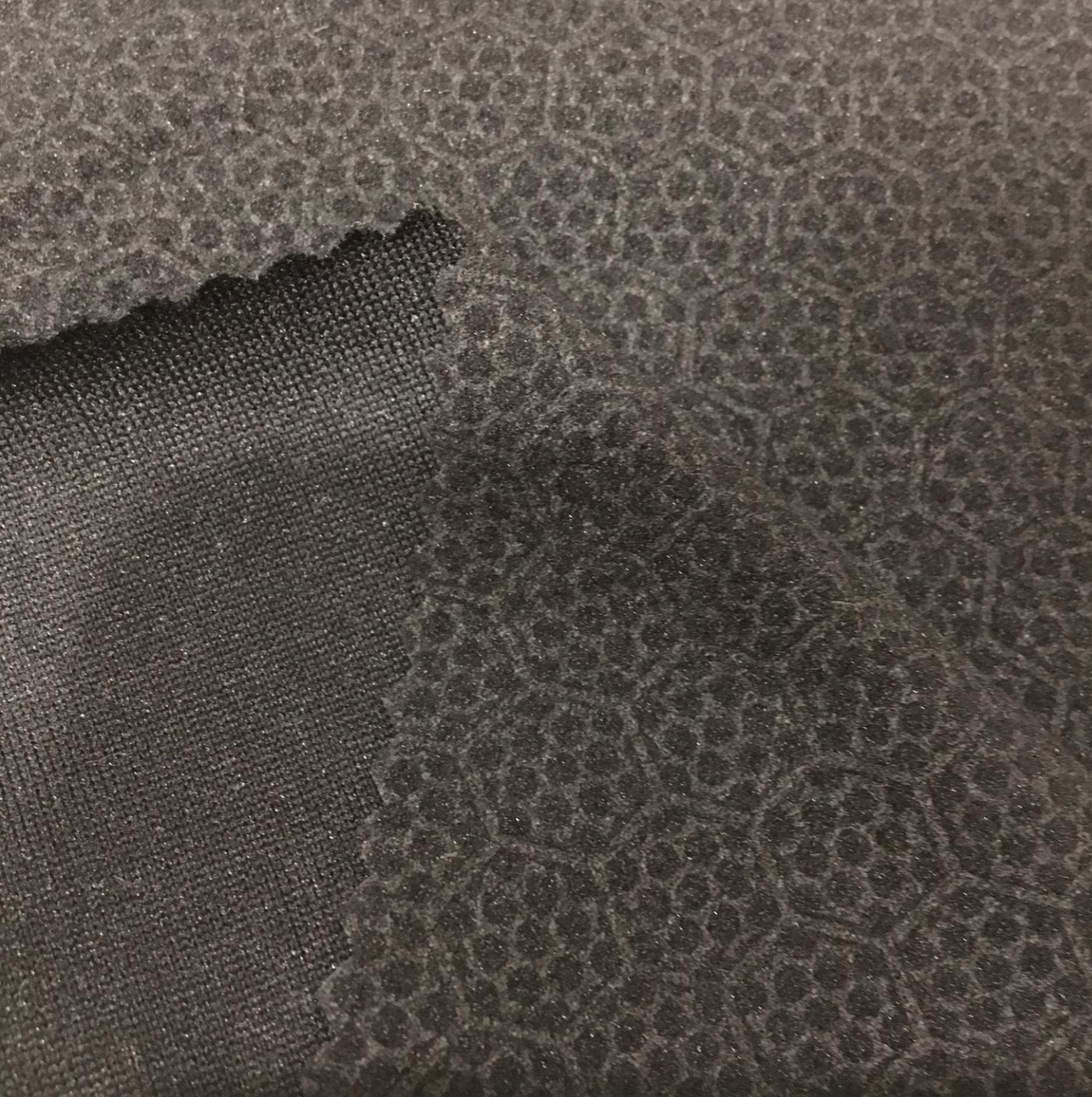
-  **Graphene Knitting fabric**
-  **Graphene printing fabric**
-  **Graphene membrane laminated fabric**

Graphene Knitting/Weaving Fabric

- Major function on thermal regulation, anti-abrasion.
- PET, PA and Rayon fiber are both available from UC customers.
- The optimal graphene dosage would be around 0.1 - 0.5%



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Graphene Printing Fabric

- Major function on thermal regulation, antistatic, and anti-abrasion.
- It would be suitable for all kind of fabrics.
- The optimal coverage for graphene pattern would be around 30-40%.



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Graphene Membrane Laminating Fabric

- Major function on thermal regulation, anti-abrasion.
- Hydrophilic PU, microporous PU and thermal plastic PU are all available.



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UC BACON

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~Let Graphene Innovating Your Life~