

Introduction of our Sustainable Material

Less is More



Basic profile



Address: No. 85, Chenggong St., Guantian Dist., Tainan City, Taiwan



Area
6600m²



Capacity
5500tons/year



ISO certification
ISO9001、ISO14001

Guosu's circular economy

Post-Consumer Recycled



Virgin PC for car's headlight
PCR PC for white network equipment

Recycled PC flakes after treatment



Guosu's PCR Plant

Classification ▶ Crushing ▶ Washing ▶ Extrusion



Crushing ▶ Washing



Recycled PC flakes after treatment

Recycling process



Classification
& Crushing

washing

Waste water
treatment

Extrusion

QC

40tons/day

200tons/day

25tons/day



Special Facilities in process

2washing line-40tons/day



cooking



dehydration



washing



drying

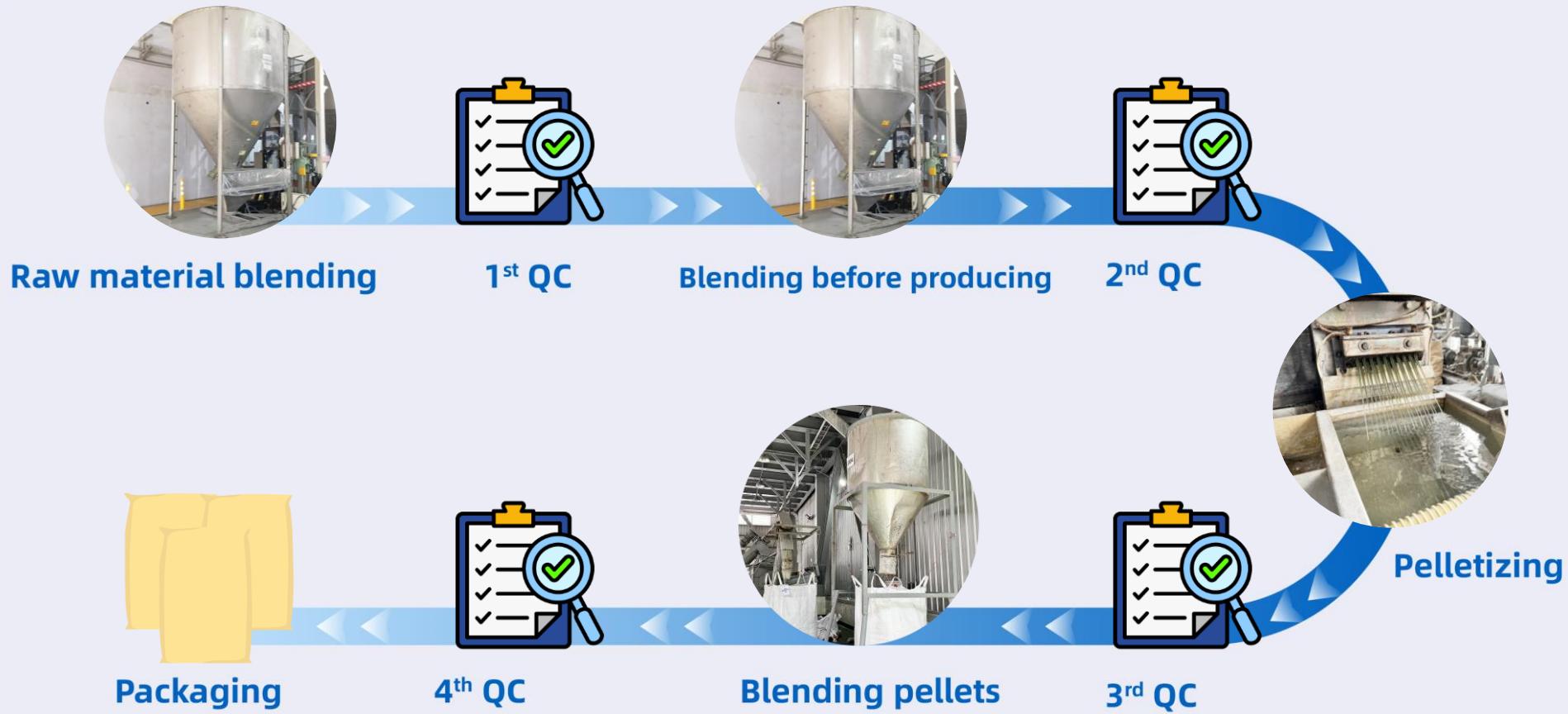
Continue to get better solution to raise the PCR PC's purity and quality

waste water treatment facility-200tons/day



Not to let our environment be polluted again by waste water.

Multiplex quality control



QC facilities

X-ray spectroscopy



HDT instrument



Impact Testers



Melt Flow Indexers



Flame Tester



Moisture Analyzer



Color Spectrophotometer



Tensile Strength Testers



Green Certification-TUV



Guo Su Plastic' s GRS certification was approved on September 11, 2021.



Green Certification-GRS



Guo Su Plastic's GRS certification was approved on June 25, 2023. We can issue the TC(transition certification) to our customers when selling PCR grades.



Green Certification-REACH SVHC and RoHS



測試報告 Test Report

號碼(No.): EKR24200985 | 日期(Date): 04-Mar-2024 | 頁數(Page): 1 of 19

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

送樣廠商(Sample Submitted By) : 國塑塑膠工業股份有限公司 (GUO SU PLASTIC INDUSTRY CO., LTD)
樣品名稱(Sample Name) : PC 聚碳酸酯
樣品型號(Style/Item No.) : PC NC-15B

收件日(Sample Receiving Date) : 23-Feb-2024
測試期間(Testing Period) : 23-Feb-2024 to 04-Mar-2024

測試需求(Test Requested)

：依據客戶指定，參考REACH之Regulation (EC) No 1907/2006的公告進行以下測試 (As specified by client, the sample(s) was/were tested with reference to Regulation (EC) No 1907/2006 concerning REACH)

240項高關注物質清單，於2024年01月23日公告 (240 Substances of Very High Concern (SVHC). Candidate list is published on January 23, 2024)

：請參閱下一页 (Please refer to following pages).

根據歐洲法院對於REACH規範下成品定義的裁決以及指定範圍和分析技術，送測樣品中所選擇的零部件成品的高關注物質(SVHC) 測試結果濃度均 $\leq 0.1\%$ (w/w) (According to the ruling of the Court of Justice of the European Union on the definition of an article under REACH, and the specified scope as well as analytical technique, the test results of the selected component article are $\leq 0.1\%$ (w/w) in the submitted sample(s).)

有效性不詳
For Question Please
Contact with SGS
www.sgs.com.tw



測試報告 Test Report

號碼(No.): EKR23901351 | 日期(Date): 02-Oct-2023 | 頁數(Page): 1 of 9

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

送樣廠商(Sample Submitted By) : 國塑塑膠工業股份有限公司 (GUO SU PLASTIC INDUSTRY CO., LTD)
樣品名稱(Sample Name) : PC 聚碳酸酯
樣品型號(Style/Item No.) : PC NC-15B

收件日(Sample Receiving Date) : 23-Sep-2023
測試期間(Testing Period) : 23-Sep-2023 to 02-Oct-2023

測試需求(Test Requested)

：(1) 依據客戶指定，參考RoHS 2011/65/EU Annex II及其修訂指令(EU) 2015/863測試 鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP - (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s))

(2) 依據客戶指定，測試鉻、氯、溴、碘。 (As specified by client, to test Halogen-Fluorine, Chlorine, Bromine, Iodine in the submitted sample)

測試結果(Test Results)

結 論(Conclusion)

：(1) 根據客戶所提供的樣品，其鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP的測試結果符合RoHS 2011/65/EU Annex II及其修訂指令(EU) 2015/863之限值要求。 (Based on the performed tests on submitted samples), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.)

Day Chang
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化學實驗室-高錕/Chemical Laboratory-Kaohsiung



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Member of the SGS Group

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Cooperation with FCFC



Guosu plastic industry corporation signed a Joint Venture Agreement with FCFC(Formosa Chemicals & Fibre Corporation) on Dec. 22, 2021. FCFC became Guosu's shareholder who owning 49% of Guosu's shares.

It's the first case in Taiwan that virgin resin's producer to cooperate with PCR plastic's producer to build the Circular Economy.

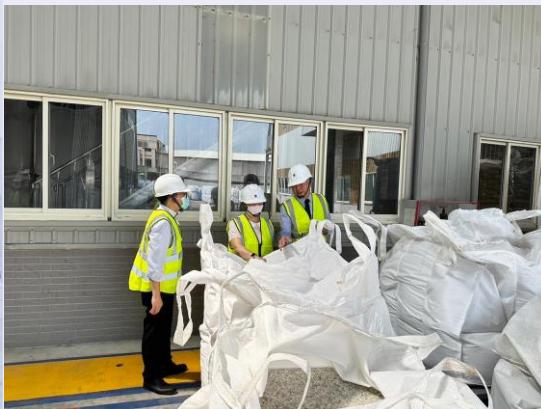


Customers' Audit

Visiting Laboratory



Introduction treated-flakes



Visiting Pelletizing area



Green office



GRPC's Grade

PC KS-10

GRS Post-Consumer-Recycled PC Certification.

Application -Flame Retardant PC/ABS of TV, Notebook, 3C electronic production, Home electronics.

性質 PROPERTIES	測試條件 CONDITION	測試方法 METHOD	單位 UNIT	數據 RESULT
熱性質 THERMAL				
熔融指數	Melt Flow Index	300°C*1.2kg	ASTM D1238	g/10min
熱變形溫度	Heat Distortion Temp.	1.82 Mpa	ASTM D638	°C
機械特性 MECHANICAL				
抗張強度	Tensile Strength	5.00 cm/min	ASTM D638	MPa(kg/cm ²)
延伸率	Tensile Elongation	5.00 cm/min	ASTM D638	%
彎曲強度	Flexural Strength	3.00 cm/min	ASTM D790	MPa(kg/cm ²)
彎曲彈性係數	Flexural Modulus	3.00 cm/min	ASTM D790	MPa(kg/cm ²)
衝擊強度	IZOD Impact Strength	3.2 mm/23°C	ASTM D256	J/M(Kg/cm-cm)
硬度	Hardness		ASTM D2240	Shore D
其他 OTHER				
灰份	Ash Content	800°C	ASTM D2584	%
比重	Specific Gravity	23°C	ASTM D792	g/cm ³
含水率	Moisture Absorption	23°C	ASTM D570	%

These are typical properties only and are not to be construed as specification.
Users should confirm results be their own tests.



GRPC's Grade

PC WB-04

GRS Post-Consumer-Recycled PC Certification.

Application -Flame Retardant PC/ABS of TV, Notebook, 3C electronic production, Home electronics.

性質 PROPERTIES	測試條件 CONDITION	測試方法 METHOD	單位 UNIT	數據 RESULT
熱性質 THERMAL				
熔融指數	Melt Flow Index	300°C*1.2kg	ASTM D1238	g/10min <8
熱變形溫度	Heat Distortion Temp.	1.82 Mpa	ASTM D638	°C ≥120
機械特性 MECHANICAL				
抗張強度	Tensile Strength	5.00 cm/min	ASTM D638	MPa(kg/cm ²) ≥55(560)
延伸率	Tensile Elongation	5.00 cm/min	ASTM D638	% ≥50
彎曲強度	Flexural Strength	3.00 cm/min	ASTM D790	MPa(kg/cm ²) ≥80(800)
彎曲彈性係數	Flexural Modulus	3.00 cm/min	ASTM D790	MPa(kg/cm ²) ≥2100(21000)
衝擊強度	IZOD Impact Strength	3.2 mm/23°C	ASTM D256	J/M(Kg/cm-cm) ≥590(60)
硬度	Hardness		ASTM D2240	Shore D ≥D-80
其他 OTHER				
灰份	Ash Content	800°C	ASTM D2584	% ≤0.1
比重	Specific Gravity	23°C	ASTM D792	g/cm ³ 1.195±0.02
含水率	Moisture Absorption	23°C	ASTM D570	% ≤0.3

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GRPC's Grade

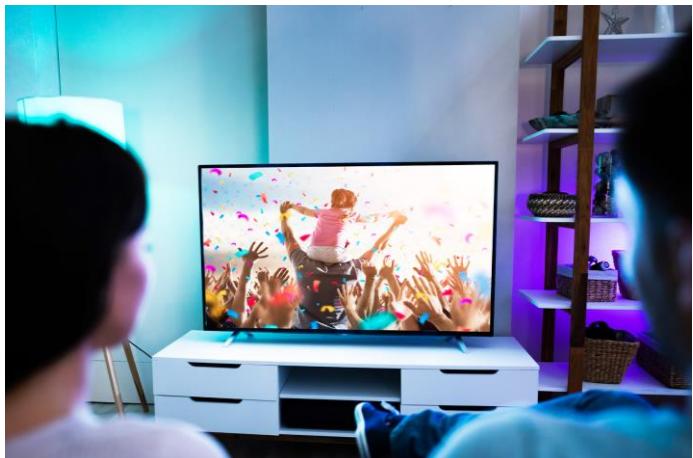
PC CD-175

GRS Post-Consumer-Recycled PC Certification.

Application -Flame Retardant PC/ABS of TV, 3C electronic production, Home electronics.

性質 PROPERTIES	測試條件 CONDITION	測試方法 METHOD	單位 UNIT	數據 RESULT
熱性質 THERMAL				
熔融指數	Melt Flow Index	300°C*1.2kg	ASTM D1238	g/10min >60
熱變形溫度	Heat Distortion Temp.	1.82 Mpa	ASTM D638	°C ≥118
機械特性 MECHANICAL				
抗張強度	Tensile Strength	5.00 cm/min	ASTM D638	MPa(kg/cm ²) ≥49(500)
延伸率	Tensile Elongation	5.00 cm/min	ASTM D638	% -
彎曲強度	Flexural Strength	3.00 cm/min	ASTM D790	MPa(kg/cm ²) ≥80(800)
彎曲彈性係數	Flexural Modulus	3.00 cm/min	ASTM D790	MPa(kg/cm ²) ≥2100(21000)
衝擊強度	IZOD Impact Strength	3.2 mm/23°C	ASTM D256	J/M(Kg/cm-cm) ≥50(5)
硬度	Hardness		ASTM D2240	Shore D ≥D-78
其他 OTHER				
灰份	Ash Content	800°C	ASTM D2584	% ≤0.1
比重	Specific Gravity	23°C	ASTM D792	g/cm ³ 1.195±0.02
含水率	Moisture Absorption	23°C	ASTM D570	% ≤0.3

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GRPC's Grade

PC NC-15B

GRS Post-Consumer-Recycled PC Certification.

Application -Flame Retardant PC/ABS of TV, Notebook, Photocopier, 3C electronic production, Home electronics

性質 PROPERTIES	測試條件 CONDITION	測試方法 METHOD	單位 UNIT	數據 RESULT
熱性質 THERMAL				
熔融指數	Melt Flow Index	300°C*1.2kg	ASTM D1238	g/10min
熱變形溫度	Heat Distortion Temp.	1.82 Mpa	ASTM D638	°C
機械特性 MECHANICAL				
抗張強度	Tensile Strength	5.00 cm/min	ASTM D638	MPa(kg/cm ²)
延伸率	Tensile Elongation	5.00 cm/min	ASTM D638	%
彎曲強度	Flexural Strength	3.00 cm/min	ASTM D790	MPa(kg/cm ²)
彎曲彈性係數	Flexural Modulus	3.00 cm/min	ASTM D790	MPa(kg/cm ²)
衝擊強度	IZOD Impact Strength	3.2 mm/23°C	ASTM D256	J/M(Kg/cm-cm)
硬度	Hardness		ASTM D2240	Shore D
其他 OTHER				
灰份	Ash Content	800°C	ASTM D2584	%
比重	Specific Gravity	23°C	ASTM D792	g/cm ³
含水率	Moisture Absorption	23°C	ASTM D570	%

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Users should confirm results be their own tests.



GRPC's Grade

PC WS-05

Modified Polycarbonate for Suitcase
GRS Post-Consumer-Recycled PC Certification.

性質 PROPERTIES	測試條件 CONDITION	測試方法 METHOD	單位 UNIT	數據 RESULT
熱性質 THERMAL				
熔融指數	Melt Flow Index	300°C*1.2kg	ASTM D1238	g/10min
熱變形溫度	Heat Distortion Temp.	1.82 Mpa	ASTM D638	°C
機械特性 MECHANICAL				
抗張強度	Tensile Strength	5.00 cm/min	ASTM D638	MPa(kg/cm ²)
延伸率	Tensile Elongation	5.00 cm/min	ASTM D638	%
彎曲強度	Flexural Strength	3.00 cm/min	ASTM D790	MPa(kg/cm ²)
彎曲彈性係數	Flexural Modulus	3.00 cm/min	ASTM D790	MPa(kg/cm ²)
衝擊強度	IZOD Impact Strength	3.2 mm/23°C	ASTM D256	J/M(Kg/cm-cm)
硬度	Hardness		ASTM D2240	Shore D
其他 OTHER				
灰份	Ash Content	800°C	ASTM D2584	%
比重	Specific Gravity	23°C	ASTM D792	g/cm ³
含水率	Moisture Absorption	23°C	ASTM D570	%

These are typical properties only and are not to be construed as specification.
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THANK YOU

