



Independent Third-Party Certification Report

GreenCircle Recycled Content Certification

Mueller Brass

Port Huron, MI Facility

Confidential - For Internal Use by Mueller Brass Only

May 17, 2024

GreenCircle Certified, LLC

155 Railroad Plaza • Royersford, PA 19468

www.GreenCircleCertified.com



Table of Contents

1.0 Introduction.....	3
1.1 Goal.....	3
1.2 Scope.....	3
2.0 Recycled Content.....	3
3.0 Observations.....	5
3.1 Data Tracking	5
3.2 Recycled Content Suppliers	5
3.3 Performance.....	6
4.0 Conclusion	6
4.1 Next Steps.....	6





1.0 Introduction

GreenCircle Certified, LLC (GreenCircle) completed a GreenCircle Recycled Content Certification for Mueller Brass. This report summarizes the attribute that was assessed and the certification results in compliance with GreenCircle Recycled Content Certification Standard Audit Plan 4.2024. Final certification values are based on the minimum values for the attribute.

1.1 Goal

Recycled Content Certification demonstrates an organization's commitment to reuse materials to support circular economy as well as reduce their reliance on virgin materials.

1.2 Scope

The certification's data collection and review period occurred from October 2023 - April 2024.

This certification was conducted in compliance with the following: Green Circle Recycled Content Certification Standard Audit Plan 4.2024, GreenCircle Recycled Content Certification Audit Plan for Copper Development Association 9.2023

This certification and report pertain to the following facility:

- Port Huron, MI

2.0 Recycled Content

GreenCircle certified the total mill recycled content at the Mueller Brass Port Huron, MI facility by collecting documentation from each recycled content material supplier to verify the amount of pre- and post-consumer recycled content within the raw materials. GreenCircle also conducted a virtual site visit to verify the use of recycled materials in the production process.

GreenCircle audited the top 61.90% of suppliers by weight, ensuring that at least one supplier per material type was audited. In total, 23 recycled content suppliers were audited. GreenCircle utilized the supplier responses to calculate the recycled content percentage for each material type. The recycled content per material type is displayed in Table 1. The Recycled Content Certification results are displayed in Table 2.





Table 1. Recycled Content by Raw Material

Raw Material	Usage (lbs)	% Pre-Consumer	% Post-Consumer	Pre-Consumer (lbs)	Post-Consumer (lbs)	Total Recycled Content (lbs)
#1 Copper Scrap	9,099,211.00	3.55%	96.45%	321,215.26	8,775,995.74	9,099,211.00
30% Silicon/70% Copper	136,078.00	0.00%	60%	0.00	81,646.80	81,646.80
50/50 Cu/Fe	24,500.00	0.00%	90.00%	0.00	22,050.00	22,050.00
70/30 Brass Solids	6,978,905.00	64.14%	35.80%	4,476,493.18	2,498,433.82	6,974,926.99
85/15 Cu Phos	90,300.00	0.00%	85.00%	0.00	76,755.00	76,555.00
85/15 Red Brass Solids	657,558.00	28.41%	71.59%	186,801.94	470,756.06	757,558.00
Arsenical Copper (30%)	6,442.00	0.00%	0.00%	0.00	0.00	0.00
B Copper Scrap	9,070,815.00	5.16%	94.84%	468,069.63	8,602,745.37	9,070,815.00
Dynalloy Scrap	4,334,822.00	100.00%	0.00%	4,334,822.00	0.00	4,334,822.00
Electrolytic Manganese	161,033.00	0.00%	0.00%	0.00	0.00	0.00
Soft Lead Ingot	808,853.00	0.00%	90.00%	0.00	727,967.70	727,967.70
Tin Ingot	43,264.00	0.00%	0.00%	0.00	0.00	0.00
Yellow BR Rod Turnings	85,082,745.00	99.30%	0.70%	84,488,991.81	593,753.19	85,082,745.00
Yellow Brass Solids	66,337,524.00	98.79%	1.21%	65,531,884.77	805,639.23	66,337,524.00
Zinc Balls	23,000.00	0.005	0.00%	0.00	0.00	0.00
Zinc Slab	12,585,784.00	2.72%	22.02%	342,661.22	2,770,898.21	3,113,259.43





Table 2. Recycled Content Certification Results

	Pre-Consumer Recycled Content (lbs)	Post-Consumer Recycled Content (lbs)	Total Recycled Content (lbs)
Total Recycled Content Input (lbs)	160,152,639.80	25,426,641.13	185,579,280.93
Total Facility Output (lbs)	194,642,695.82	194,642,695.82	194,642,695.82
Recycled Content Percentage	82%	13%	95%

The total output of the facility represented in Table 2 includes the final production, the casting outgoing scrap, metal loss, the finishing yield, and the casting yield.

3.0 Observations

GreenCircle has provided observations to emphasize the importance of continual improvement as the key to a sustainable product development program.

3.1 Data Tracking

- Arsenical Copper (30%) and Zinc Balls were used during the evaluation period but were purchased prior to the evaluation period. For these materials, supplier outreach was not conducted, and these materials were assumed to be 0% recycled content.
- Four raw materials: 70% Copper/30% Manganese, 90/10 Brass Scrap, Concentrates, and Zinc Shot; were listed in the purchases data, but not listed in the usage data submitted by Mueller Industries. Mueller Industries was able to confirm that these materials were incorrectly reported in the usage data under another material name.
 - 70% Copper/30% Manganese was listed as 70/30 Brass Scrap.
 - 90/10 Brass Scrap was listed as 85/15 Red Brass Solids.
 - Concentrates were listed as Yellow Brass Solids.
 - Zinc Shot was excluded from the calculations because this was used as a trial material.

3.2 Recycled Content Suppliers

- Parker Brass and Spears Caney Inc. were unresponsive to GreenCircle’s data request. However, Mueller Brass confirmed that these two suppliers are customers who only supply reprocessed scrap from Mueller Brass’s products. The materials are assumed to be 100% post-industrial recycled content (PIR), or 100% pre-consumer recycled content.





- Alberts Integrated Piping Systems and MetalsCo Inc were unable to provide a source description of the recycled content materials supplied to Mueller Brass. The materials were listed as 100% PIR. GreenCircle assumed these percentages were accurate, but during the next certification, GreenCircle will need confirm the source of the recycled content.

3.3 Performance

- GreenCircle certified the Port Huron, MI Mueller Brass facility at a minimum 82% pre-consumer recycled content, 13% post-consumer recycled content, and 95% total recycled content.
- Mueller Brass’s Group Financial Officer was responsive to all data requests, which led to a successful certification process.

4.0 Conclusion

GreenCircle completed a GreenCircle Recycled Content Certification for Mueller Brass for the products and facility listed in Section 1.2. This analysis takes a snapshot of the most recent data available to validate these claims. Per the terms set forth in the GreenCircle proposal, Mueller Brass is required to notify GreenCircle Certified, LLC of any significant changes in products or operations that could alter any of the claims detailed in this certification.

The certified claims are published on GreenCircle Certification number 24-0354. The certificate does not expire and lists the audit period: January 1, 2023 – December 31, 2023. This certificate is currently not listed on the [GreenCircle Certified Product Database](#).

4.1 Next Steps

Mueller Brass is welcome to reach out to GreenCircle at any time for marketing support including review of marketing materials; mark usage compliance questions; or to discuss a communication plan for the GreenCircle certification.

Final report prepared by:

Daniel Lazarus, Senior Project Manager, GreenCircle Certified, LLC
(Print Name, Title, Company)

(Signature)

Final quality check and assurance conducted by:

Gemma Antoniewicz, Technical Manager, GreenCircle Certified, LLC
(Print Name, Title, Company)

(Signature)

