LEED v4.1

Sustainability at Marino\WARE®:

Marino\WARE® believes sustainability and environmental management are not construction industry trends, but corporate responsibilities. Architects, designers and contractors demand tools and resources to improve the environmental performance of buildings, and Marino\WARE® products help them achieve their sustainability objectives.

MR Credit: Building Product Disclosure and Optimization--Environmental Product Declarations (1-2 points)

Encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically and socially preferable life-cycle impacts.

Environmental Product Declaration (EPD)
Use at least 20 different permanently installed products sourced from at least five different manufacturers.

Environmental Product Declarations which conform to ISO 14025, 14040, 14044 and EN 15804 or ISO 21930 and have at least a cradle to gate scope.

- Product specific Type III EPD—Marino\WARE® has a third-party certification (Type III), including external verification in which Marino\WARE® is recognized as the participant by the program operator and is valued as 1.5 products for purposes of credit achievement calculation.

MR Credit: Building Product Disclosure and Optimization--Sourcing of Raw Materials (1-2 points)

Encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically and socially preferable life-cycle impacts. To reward project teams for selecting products verified to have been extracted or sourced in a responsible manner.

Recycled Content. Recycled content is the sum of post-consumer recycled content plus one-half the pre-consumer recycled content, based on weight. Products meeting recycled content criteria are valued at 100% of their cost for the purposes of credit achievement calculation. The recycled fraction of the assembly is then multiplied by the cost of the assembly to determine the recycled content value.

Marino\WARE® Recycled Content:
Post-consumer Recycled Content 19.8%
Pre-consumer Recycled Content 14.4%
*Higher recycled content percentage may be available based on inventory.

MR Credit: Building Product Disclosure and Optimization--Material Ingredients (1-2 points)

Encourage the use of products and materials for which life-cycle information is available and that have environmentally, and socially preferable life-cycle impacts. To reward project teams for selecting products for which the chemical ingredients in the product are inventoried using an accepted methodology and for selecting products verified to minimize the use and generation of harmful substances. To reward raw material manufacturers who produce products verified to have improved life-cycle impacts.

Option 1. Material Ingredient Reporting

Health Product Declaration. Marino\WARE® has a published, complete Health Product Declaration with full disclosure of known hazards in compliance with the Health Product Declaration Open Standard.

MR Credit: Construction and Demolition Waste Management (1-2 points)

To reduce construction and demolition waste disposed of in landfills and incineration facilities by recovering, reusing and recycling materials.

Option 1. Diversion (1-2 points)

Path 1 or Path 2.
Marino\WARE framing products and accessories are 100% recyclable. This contribution calculation must be made by the contractor.

MARINO WARE®

For more information on our products and services, call 1-800-627-4661 or visit www.MarinoWARE.com

Project Name: _____

Project Address: _____

_____

Contractor: _____

www.MarinoWare.com

ENVIRONMENTAL PRODUCT DECLARATION

COLD-FORMED STEEL FRAMING SYSTEMS

STRUCTURAL, STUDRITE®, JOISTRITE®, CLIPSOURCE® CONNECTORS, QUICKFRAME, VIPERSTUD®, SHAFTWALL, AREA SEPARATION WALL, FAS TRACK, SLOTTED TRACK, LATH, SOUNDGUARD, ACCESSORIES

Marino\WARE manufactures and distributes a wide range of cold-formed steel framing products and accessories. Above are examples of SoundGuard (bottom right), ClipSource products (bottom left) and our StudRite system (top).

MARINO\WARE®

Sustainability at Marino\WARE®

Marinc\WARE believes sustainability and environmental management are not construction industry trends, but corporate responsibilities. Architects, designers and contractors demand tools and resources to improve the environmental performance of buildings, and Marino\WARE products help them achieve their sustainability objectives.

Steel is inherently a green building product. It can be recycled time and time again. It is our goal to show the construction industry through our company specific Environmental Product Declaration that steel should be the product of choice for green building professionals.

For additional information, visit www.marinoware.com.

UL CERTIFIED ENVIRONMENTAL PRODUCT DECLARATION UL.COM/EPD

ENVIRONMENTAL PRODUCT DECLARATION

Marino\WARE®
Cold-Formed Steel Framing Systems

According to ISO 14025, EN 15804, and ISO 21930:2017

EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE	UL Environment 333 Pfingsten Road Northbrook, IL 60611	https://www.ul.com/ https://spot.ul.com/
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	General Program Instructions v.2.5 March 2020	
MANUFACTURER NAME AND ADDRESS	Marino\WARE | 777 Greenbelt Pkwy Griffin Georgia 30223-4518	
DECLARATION NUMBER	4789995390.101.1	
DECLARED PRODUCT & FUNCTIONAL UNIT OR DECLARED UNIT	Cold-Formed Steel Framing Products; 1 metric ton	
REFERENCE PCR AND VERSION NUMBER	Part B: Steel Construction Product EPD Requirements, v2.0 (August 26, 2020)	
DESCRIPTION OF PRODUCT APPLICATION/USE	Cold-Formed Steel Products are used in a wide range of steel framing products and accessories for both commercial and residential construction markets.	
PRODUCT RSL DESCRIPTION (IF APPL.)	N/A	
MARKETS OF APPLICABILITY	North America	
DATE OF ISSUE	July 1, 2021	
PERIOD OF VALIDITY	5 Years	
EPD TYPE	Product-Specific Type III	
RANGE OF DATASET VARIABILITY	N/A	
EPD SCOPE	Cradle-to-gate	
YEAR(S) OF REPORTED PRIMARY DATA	2020	
LCA SOFTWARE & VERSION NUMBER	GaBi v10	
LCI DATABASE(S) & VERSION NUMBER	GaBi 2021.1	
LCIA METHODOLOGY & VERSION NUMBER	TRACI 2.1	

This PCR Review was conducted by:	UL Environment PCR Review Panel epd@ulenvironment.com
This declaration was independently verified in accordance with ISO 14025: 2006. ☐ INTERNAL ☒ EXTERNAL	Grant R. Martin Grant R. Martin, UL Environment
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Thomas P. Gloria Thomas P. Gloria, Industrial Ecology Consultants

LIMITATIONS

Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc.

Accuracy of Results: EPDs regularly rely on estimations of impacts; the level of accuracy in estimation of effect differs for any particular product line and reported impact.

Comparability: EPDs from different programs may not be comparable. Full conformance with a PCR allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible". Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.

ENVIRONMENTAL PRODUCT DECLARATION

Marino\WARE®
Cold-Formed Steel Framing Systems

According to ISO 14025, EN 15804, and ISO 21930:2017

1. Product Definition and Information

1.1. Company Description

Marino\WARE® helps build America. A wholly U.S. owned and operated steel framing manufacturer, Marino\WARE produces a complete line of steel construction products and services used in commercial building across the country.

The company's three large, self-sufficient mega-plants in South Plainfield, NJ, Griffin, GA, and East Chicago, IN sell—ViperStud® drywall framing, structural, shaftwall, StudRite, JoistRite, SoundGuard, ClipSource Connectors, plastering and drywall finishing products—all under one roof.

1.2. Product Description

The Marino\WARE steel framing products covered by this EPD are:

Material & Coatings:

Marino\WARE uses low alloy steel with metallic or conversion coatings.

Structural Stud & Track
- Used for load-bearing framing, curtain wall, headers, rafters and floor systems
- Conventional C-shape, wide variety of gauges and flange sizes

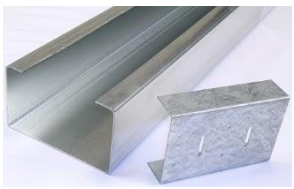
StudRite®
- Proprietary stud sytem used for load-bearing framing, rafters and curtain walls
- Lip reinforced repetitve triangular knockouts
- Lightweight, easy to use, less cutting by trades

JoistRite®
- Used as a floor joist system
- Large lip reinforced repetitve triangular knockouts for easy pass through of trades

ENVIRONMENTAL PRODUCT DECLARATION

Marino\WARE®
Cold-Formed Steel Framing Systems

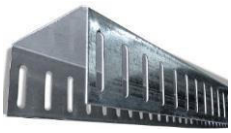
According to ISO 14025, EN 15804, and ISO 21930:2017



QuickFrame
Rough opening framing system that uses large C-shaped members to replace built up headers and jambs

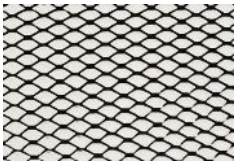
ViperStud®
Proprietary drywall framing system that uses thinner high-strength steel to achieve performance equivalent of conventional thickness lower-strength steel drywall framing members

Shaftwall
CT stud framing system for non load-bearing framing that allows installtion of gypsum wallboad from one side only; easy to use for stairwells and shaft



Slotted Track & FAS Track
Fire-rated head-of-wall system that allows for deflection at the ceiling-to-floor intersection while providing a fire-rated joint

ClipSource® Connectors
Steel framing connectors produced in a wide variety of shapes and sizes for connecting framing members



Lath
Expanded metal lath is made by slitting and stretching galvanized steel to create small openings that allow plaster to bond with the lath

SoundGuard
Acoustically decoupled stud for interior partitions with high STC ratings

1.3. Application

Marino\WARE uses cold-formed steel to manufacture a wide range of steel framing products and accessories for

The commercial and residential construction markets. Common applications are:

1. Interior and Exterior framing, both for load-bearing and non-load bearing applications
2. Interior and exterior finishing
3. Floor framing
4. Accessories for interior and exterior framing

1.4. Declaration of Methodological Framework

The EPD has been created strictly in accordance to the standards and norms below:

- ISO 14025:2011 Type III environmental declarations - Principles and procedures [EN ISO 14025].
- EN 15942: 2011, Sustainability of construction works – Environmental Product Declarations – Communication format business-to-business. European Committee for Standardization [EN 15942].
- ISO 21930: 2017, Sustainability in building and construction – Environmental declaration of building products, International Organization for Standardization, Geneva, Switzerland [ISO 21930].
- Product Category Rule (PCR) Guidance for building-related products and services- Part A: Life Cycle Assessment Calculation Rules and Report Requirements [UL 2018]
- Product Category Rule (PCR) Guidance for building-related products and services- Part B: Designated steel construction product EPD requirements [UL 2020].

MARINO\WARE®

CERTIFIED
ENVIRONMENTAL PRODUCT DECLARATION
UL.COM/EPD

Marino\WARE®
Cold-Formed Steel Framing Systems

According to ISO 14025, EN 15804, and ISO 21930:2017

1.5. Technical Requirements

MATERIAL SPECIFICATION (ASTM)

ViperStud® Drywall Nonstructural Framing Members & Accessories	A1003/A653
Structural Framing Members & Accessories	A1003/A653
JoistRite® Framing Members & Accessories	A1003/A653
StudRite® Framing Members & Accessories	A1003/A653
QuickFrame™	A1003/A653
Shaftwall	A1003/A653
SoundGuard®	A1003/A653

PRODUCT SPECIFICATION	ASTM
ViperStud® Drywall Nonstructural Framing Members & Accessories	C645
Structural Framing Members & Accessories	C955
JoistRite® Framing Members & Accessories	C955
StudRite® Framing Members & Accessories	C645/C955
QuickFrame™	C955
Shaftwall	C645
SoundGuard®	C645
Beads & Trims (Metal, Paper, Vinyl)	C1047
Veneer & Plaster Accessories	C841/C1063
Metal Lath	C847

COATING SPECIFICATION	ASTM
ViperStud® Drywall Nonstructural Framing Members & Accessories	C645/A1003
Structural Framing Members & Accessories	C955/A1003
JoistRite® Framing Members & Accessories	C955/A1003
StudRite® Framing Members & Accessories	C645/C955/A1003
QuickFrame™	C955/A1003
Shaftwall	C645/A1003
SoundGuard®	C645/A1003
Metal Lath	C847/A1003

SUREBOARD

- IAPMO ES ER-0126
- IAPMO ES ER-0185

JOISTRITE®

- ICC-ES ESR #1741

CLIPSOURCE® CONNECTORS

- ICC-ES ESR #3578

VIPERSTUD™ DRYWALL FRAMING

- Intertek CCRR-0154

CODE COMPLIANCE
Intertek

STUDRITE®

- IAPMO ES ER-781

METAL LATH

- ICC-ES ESL #1005

STRUCTURAL STUD & TRACK

- ICC-ES ESR #4062

Marino\WARE products are not expected to create exposure conditions that exceed safe thresholds for health impacts to humans or flora/fauna under normal operating conditions.

1.6. Properties of Declared Product as Delivered

PRODUCT	SIZES	THICKNESS (MILS)
STRUCTURAL	1-5/8”–16” Stud & Track	33, 43, 54, 68, 97, 118
STUDRITE	3-5/8”, 4”, 6”, 8”	18, 30, 33, 43, 54, 68
JOISTRITE	8”, 9-1/4”, 10”, 11-1/4”, 12”, 14”	43, 54, 68, 97
QUICKFRAME	3-5/8”, 4”, 6”, 8”	54, 68, 97, 118
VIPERSTUD	1-5/8”–6”	25eq, 20eq, 30, 33
SHAFTWALL	2-1/2”, 4”, 6”	18, 30, 33, 43
SLOTTED / FAS TRACK	2-1/2”–10”	18, 30, 33, 43, 54, 68
FRAMERITE CONNECTORS	Various	Various
LATH	27” x 97”	1.75lb./yd^2, 2.5 lb./yd^2, 3.4 lb./yd^2

1.7. Material Composition

Marino\WARE manufactures a variety of steel framing products using low alloy metallic coated (ex. HDG) or conversion coated steel. As the cold-forming process solely represents the mechanical shaping of the input material, i.e. HDG steel, the product is entirely composed of coated steel.

Material	Mass [kg]	Mass [%]	DQI*
Coated Steel	1000	100	Measured

1.8. Manufacturing

The EPD represents Marino\WARE’s cold-forming process at three sites, South Plainfield, NJ, Griffin, GA, and East Chicago. The manufacturing operations include following steps and are summarized in Figure 1.

- Coil slitting
  - Decoiling
  - Slittling
  - Recoiling
- Roll forming
- Packaging
- Loading

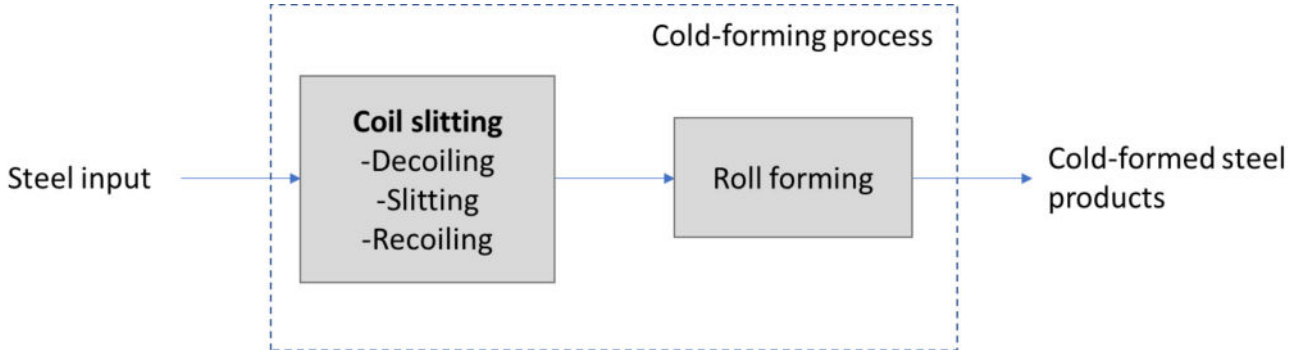


Figure 1: Flow diagram with cold-forming steel manufacturing steps

1.9. Packaging

All of the various steel framed products are packaged and shipped using one of the following material: steel banding, plastic wrapping, and wooden palets.

Product Image	Product Category	Product Description
	Exterior Framing: Skid (StudRite in photo-conventional framing packaged similiarly)	Framing members are nested together, and strapped with banding over lumber.
	Interior Framing: Skid (SoundGuard in photo-conventional framing packaged similiarly)	Framing members are nested together, and strapped with banding over lumber.
	Exterior Finishing: Metal Lath - Skids	Bundles are plastic strapped together, then bundles are stacked and strapped with banding over lumber.

Marino\WARE®
Cold-Formed Steel Framing Systems

According to ISO 14025, EN 15804, and ISO 21930:2017

Product Image	Product Category	Product Description
	Interior & Exterior Finishing accessories: Boxed goods	Cardboard boxes are stacked and strapped with banding over lumber.

1.10. Transportation

Transportation to customer after production not declared in this EPD.

1.11. Product Installation

Product Installation is not declared in this EPD.

1.12. Use

Use of product is not declared in this EPD.

1.13. Reference Service Life and Estimated Building Service Life

As the declared system boundary is A1-A3, a reference service life is not declared.

1.14. Reuse, Recycling, and Energy Recovery

Reuse, Recyling and Energy Recovery of product is not declared in this EPD.

1.15. Disposal

Disposal of product is not declared in this EPD.

2. Life Cycle Assessment – Product System and Modeling

A “cradle-to-gate” analysis using life cycle assessment (LCA) techniques was conducted for this EPD. The analysis was done according to the product category rule (PCR) for Designated Steel Construction Products and followed LCA principles, requirements and guidelines laid out in the ISO 14040/14044 standards. As such, EPDs of construction products may not be comparable if they do not comply with the same PCR. While the intent of the PCR is to increase comparability, there may still be differences among EPDs that comply with the same PCR (e.g., due to differences in system boundaries, background data, etc.).

2.1. Functional or Declared Unit

The declared unit for an EPD is one metric ton of steel construction product.

The declared unit of calculation is one metric ton of Cold-Formed Steel Product (1000 kg).

Name	Required Unit	Value
Declared Unit	Metric Ton	1

2.2. System Boundaries

The declared system boundary is cradle-to-gate. Cradle-to-gate includes the PCR life cycle modules A1, A2, and A3. The declared system boundaries are shown below:

Production			Installation		Use Stage							End-Of-Life				Next Product System
Raw material supply (extraction, processing, recycled material)	Transport to manufacturer	Manufacturing	Transport to building site	Installation into building	Use / application	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction / demolition	Transport to EoL	Waste processing for reuse, recovery or recycling	Disposal	Reuse, recovery or recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

X= declared module; MND= module not declared

The system boundary and life cycle stages assessed in this EPD are shown in Figure

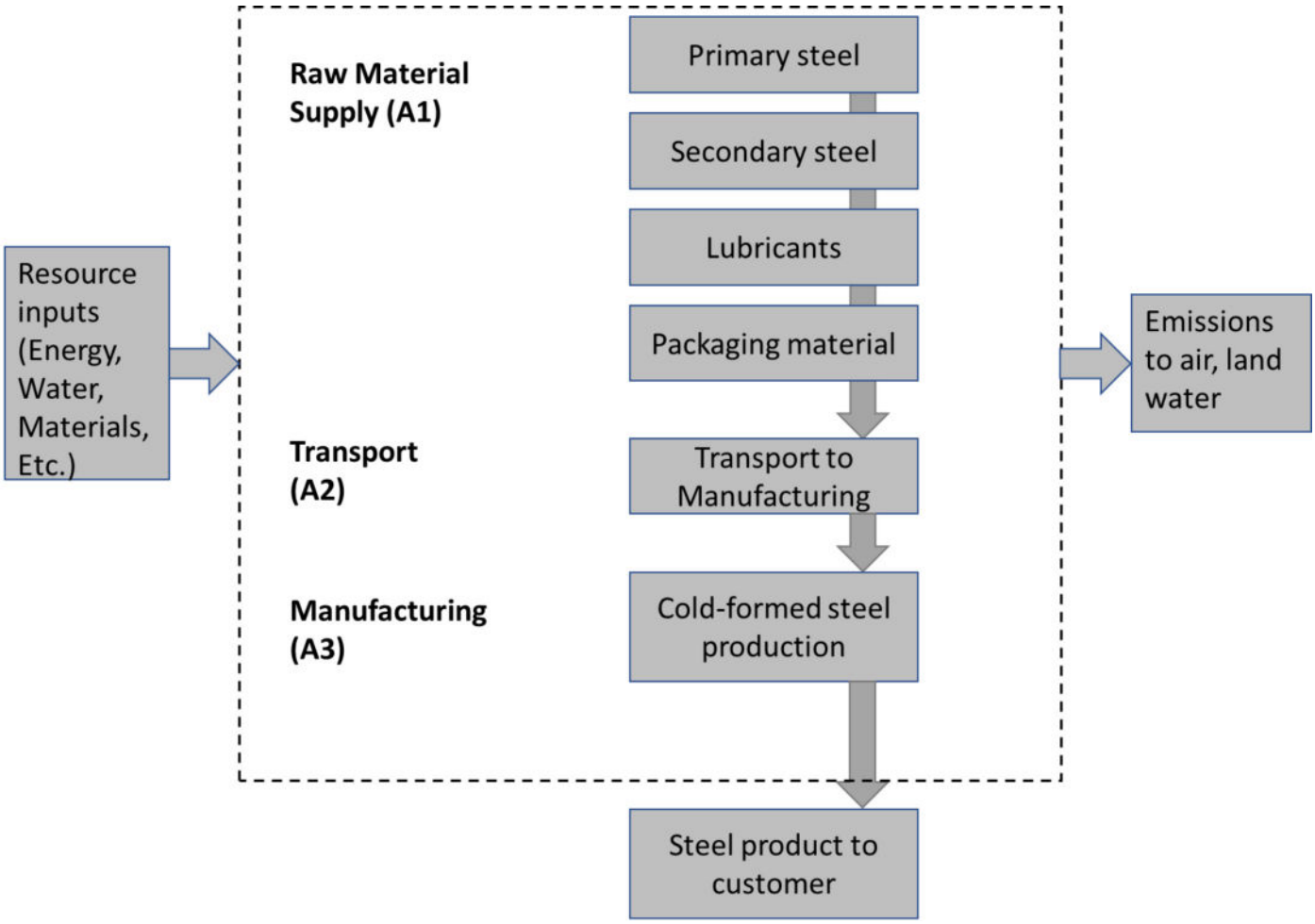


Figure 2: Flow diagram depicting the scope and system boundary

2.3. Estimates and Assumptions

Product Average (Procution data assumptions)

This product specific EPD uses weighted averages based on production output from identical manufacturing processes at three production locations reported. Data from one site is considered as proxy for the other two sites. The electricity consumption is split between the three eGRiD subregions, for the manufacturing sites based on the fractions of production output from each each site.

Transport assumptions

The three Marino\WARE plants receive their materials from different sources, i.e., across different transport distances. For HDG steel inputs, a weighted average transport distance was apllied based on each plant's fraction of total production and based on each plant's primary steel supplier's location. As a result, the weighted average distance is 793 kms. by heavy-duty truck. Lubricant, propane and packaging inputs were each assigned an estimated transport distance of 161 kms.

Transport distance of all waste materials, other than steel scrap, to disposal is assumed to be 32 kms and is carried out by truck. Only one-way transport distances have been modeled.

Final product packaging assumptions

Marino\WARE does not currently track packaging waste. It is assumed that 2% of the packaging material is processed as waste.

Steel assumptions

As is in line with the PCR, all steel manufacturing processes use scrap, regardless of production route. However, input of scrap is considered to enter the system without burden, and reprocessing into valuable secondary steel is assumed to be done outside of the system boundary. This approach is considered to be consistent with a cradle-to-gate analysis, as the load of using scrap as well as the credit of creating scrap at the end-of-life are similarly excluded from the system boundary.

Data approximations

Most of the material inputs declared by Marino\WARE for the production of cold-formed steel products could be matched with corresponding datasets from the GaBi 10 database. However, in some few instances a direct match was not possible and proxy data were used instead. It is worth noting that most of these proxies were used for auxiliary materials and packaging materials that do not significnatly contribute to the overall mass balances of the unit processes considered in this study.

2.4. Cut-off Criteria

All input/output process data for the production of cold-formed steel products have been modelled. No cut-offs have been applied.

2.5. Data Sources

All upstream data have been taken from the GaBi 2021 database (content version 2021.1), using GaBi software. All manufacturing data were collected from Marino\WARE for the calendar year 2019.

To ensure the highest data quality, primary data were collected by Marino\WARE. Where primary data could not be collected, background LCI data comes from the GaBi database.

2.6. Data Quality

Representativeness

Temporal: All primary data were collected for the year 2019. All secondary data come from the GaBi 2021 databases and are representative of the years 2011-2020. Most of the burdens come from the AISI datasets and not from primary data. As the study intended to compare the product systems for the reference year 2019, temporal representativeness is considered to be high.

Geographical: All primary and secondary data were collected specific to the countries or regions under study. Where country-specific or region-specific data were unavailable, proxy data were used. Geographical representativeness is considered to be high.

Technological: All primary and secondary data were modeled to be specific to the technologies or technology mixes under study. Where technology-specific data were unavailable, proxy data were used. Technological representativeness is considered to be high.

Completeness

All relevant process steps for each product system were considered and modeled to represent each specific situation. The process chain is considered sufficiently complete and detailed with regard to the goal and scope of this study.

Reliability

Primary data for the production of cold-formed steel products were collected by ClarkDietrich using a specifically developed spreadsheet provided by thinkstep. Cross-checks concerning the plausibility of mass and energy flows were carried out by Sphera on the data received via email, telephone consultation and teleconferencing.

The foreground data is considered to be very good as it meticulously recorded all relevant energy and material flows. The background data quality is considered to be good.

Consistency

All assumptions, methods and data are consistent with each other and with the study's goal and scope. Differ-ences in background data quality were minimized by mainly using LCI data from the GaBi 2021 databases (with the exception of the steel input which was informed by AISI data). System boundaries, allocation rules, and impact assessment methods have been applied consistently throughout the study.

2.7. Period under Review

Primary data collected represent production during the 2020 calendar year. This analysis is intended to represent production in 2020.

2.8. Allocation

Allocation of background data

Allocation of background data (energy and materials) taken from the GaBi 2021 databases is documented online at https://sphera.com/wp-content/uploads/2020/04/Modeling-Principles-GaBi-Databases-2021.pdf.

Allocation in the foreground data

The production process does not give rise to any co-products.

2.9. Comparability (Optional)

Any comparison of EPDs shall be subject to the requirements of ISO 21930. For comparison of EPDs which report different module scopes, such that one EPD includes Module D and the other does not, the comparison shall only be made on the basis of Modules A1, A2, and A3. Additionally, when Module D is included in the EPDs being compared, all EPDs must use the same methodology for calculation of Module D values.

3. Life Cycle Assessment – Results and Analysis

Table 1. Description of the system boundary modules

	PRODUCT STAGE			CONSTRUCT-ION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
	Raw material supply	Transport	Manufacturing	Transport from gate to site	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Building Operational Energy Use During Product Use	Building Operational Water Use During Product Use	Deconstruction	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling Potential
EPD Type	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

3.1. Life Cycle Impact Assessment Results

LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

Table 2. Impact Assessment Results: 1 metric ton of Cold-Formed Steel Product

TRACI v2.1	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
GWP 100 [kg CO_2 eq]	2.48E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
ODP [kg CFC-11 eq]	1.73E-11	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
AP [kg SO_2 eq]	5.09E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
EP [kg N eq]	2.75E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
SFP [kg O_3 eq]	8.92E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
ADP_{fossil} [MJ, LHV]	2.02E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

These six impact categories are globally deemed mature enough to be included in Type III environmental declarations. Other categories are being developed and defined and LCA should continue making advances in their development. However, the EPD users shall not use additional measures for comparative purposes.

Global warming potential (GWP) excludes biogenic carbon.

3.2 Life Cycle Inventory Results

Table 3. Resource Use: 1 metric ton of Cold-Formed Steel Product

PARAMETER	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
RPR_E [MJ, LHV]	1.59E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
RPR_M [MJ, LHV]	3.42E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
RPR_T [MJ, LHV]	-	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
$NRPR_E$ [MJ, LHV]	3.05E+04	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
$NRPR_M$ [MJ, LHV]	2.21E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
$NRPR_T$ [MJ, LHV]	-	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
SM [kg]	3.92E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
RSF [MJ, LHV]	-	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
NRSF [MJ, LHV]	-	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
RE [MJ, LHV]	-	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
FW [m^3]	1.17E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

Table 4. Output Flows and Waste Categories: 1 metric ton of Cold-Formed Steel Product

PARAMETER	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
HWD [kg]	1.16E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
NHWD [kg]	9.80E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
HLRW [kg]	1.10E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
ILLRW [kg]	9.25E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
CRU [kg]	-	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
MFR [kg]	8.70E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
MER [kg]	-	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
EE [MJ, LHV]	-	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

4. Life Cycle Assessment Interpretation

Module A1 contributes to over 89% of the impacts across all impact categories except for ozone depletion (ODP), renewable primary resources with energy content used as material (RPRM), and non-renewable primary resources with energy content used as material (NRPRM). The fabrication operations at Marino\WARE (A3) contribute to almost 100% of the impacts in these categories.

Module A2 contributes very little across the categories with a maximum of about 10% in the case of eutrophication potential (EP), and 7% for smog formation potential (SFP).

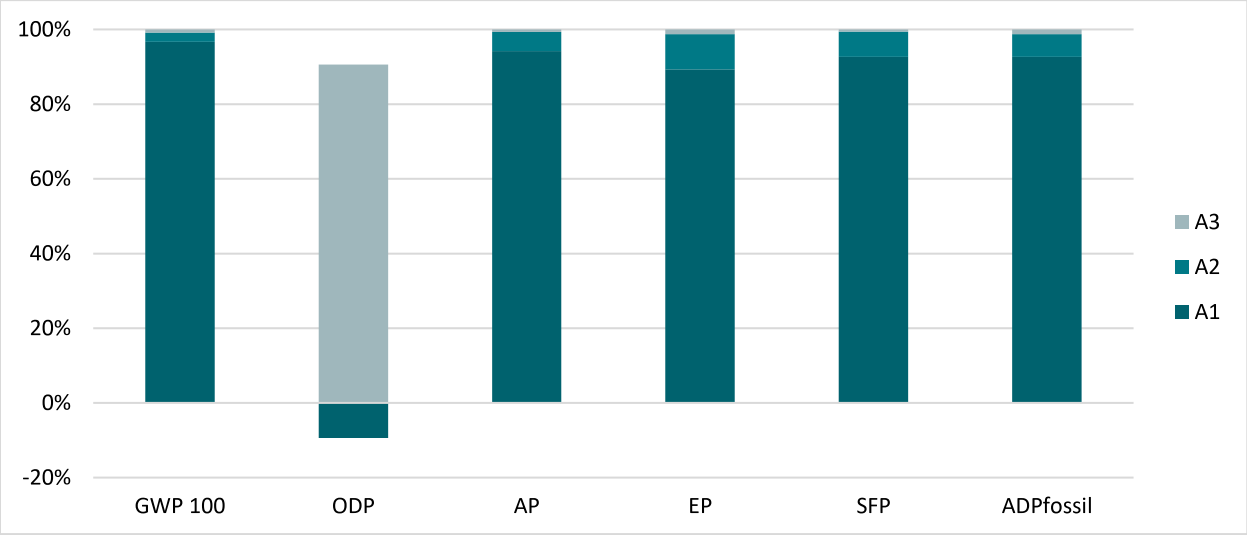


Figure 3: Cradle-to-gate life cycle impact assessment results

Other than the raw materials, inbound transport (i.e., transport of material inputs to the production site) has the highest contribution to manufacturing stage impacts across the categories and indicators with 3% contribution to GWP100 and 10% to eutrophication potential (EP).

Waste management (which includes transport of waste material to recovery or disposal, and relevant waste processing) makes negligible contributions to overall production phase impacts.

5. Supporting Documentation

Additional information Safety Data Sheets (SDS) and Health Product Declarations (HPD) may be found at

https://www.marinoware.com/resource-center/sds/

6. References

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Marino\WARE® Cold-Rolled Steel Framing Systems by Marino\WARE

Health Product Declaration v2.3

created via: HPDC Online Builder

HPD UNIQUE IDENTIFIER: 74363304960
CLASSIFICATION: 05 40 00 Cold-Formed Metal Framing
PRODUCT DESCRIPTION: Marino\WARE® helps build America. A wholly U.S. owned and operated steel framing manufacturer, Marino\WARE provides a complete line of steel construction products and services used in commercial building across the country. The company's three large, self-sufficient mega-plants in South Plainfield, NJ, Griffin, GA and East Chicago, IN each make every product sold all under one roof. This HPD covers the following Marino\WARE products: Structural, StudRite®, JoistRite®, ClipSource® Connectors, QuickFrame™, ViperStud®, Shaftwall, Area Separation Wall, FAS Track, Slotted Track, Lath, and accessories. In order to obtain cold-formed steel framing products that comply with the residual disclosure levels of this HPD, you must request mill certified steel at the time you place your order. If the request is made after manufacturing we cannot guarantee the applicability of this document. MasterSpecs 09 22 16.00 & 05 40 00

Section 1: Summary

Nested Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format
- (•) Nested Materials Method
- ( ) Basic Method

Threshold Disclosed Per
- ( ) Material
- (•) Product

Threshold Level
- (•) 100 ppm
- ( ) 1,000 ppm
- ( ) Per GHS SDS
- ( ) Other

Residuals/Impurities Evaluation
Completed in 1 of 1 Materials

Explanation(s) provided for Residuals/Impurities?
(•) Yes ( ) No

For all contents above the threshold, the manufacturer has:

Characterized (•) Yes ( ) No
Provided weight and role.

Screened (•) Yes ( ) No
Provided screening results using HPDC-approved methods.

Identified ( ) Yes (•) No
Provided name and CAS RN or other identifier.

CONTENT IN DESCENDING ORDER OF QUANTITY

Summary of product contents and results from screening individual chemical substances against HPD Priority Hazard Lists and the GreenScreen for Safer Chemicals®. The HPD does not assess whether using or handling this product will expose individuals to its chemical substances or any health risk. Refer to Section 2 for further details.

NESTED MATERIAL | MATERIAL OR SUBSTANCE | *RESIDUAL OR IMPURITY*
GREENSCREEN SCORE | HAZARD TYPE

HOT-DIP GALVANIZED STEEL [STEEL NoGS ZINC (POWDER) LT-P1 | END | MUL | PHY | AQU HYDROCHLORIC ACID BM-2 | MAM | SKI | EYE | AQU MINERAL OILS LT-UNK POTASSIUM HYDROXIDE LT-P1 | SKI | MAM | EYE CHROMIUM (VI) OXIDE LT-1 | CAN | SKI | MUL | DEV | GEN | REP | MAM | AQU | PHY | EYE PHOSPHORIC ACID LT-P1 | SKI | MAM | EYE]

Number of Greenscreen BM-4/BM3 contents ... 0

Contents highest-concern GreenScreen score(s) (BM-1, LT-1, LT-P1) ... LT-P1, LT-1

Nanomaterial ... No

INVENTORY AND SCREENING NOTES:

This HPD was completed in accordance with the latest HPD Standard, version 2.3

VOLATILE ORGANIC COMPOUND (VOC) CONTENT

VOC Content data is not applicable for this product category.

CERTIFICATIONS AND COMPLIANCE *See Section 3 for additional listings.*

VOC emissions: Inherently non-emitting source per LEED
LCA: Environmental Product Declaration (EPD) by UL

CONSISTENCY WITH OTHER PROGRAMS

Pre-checked for LEED v4 Option 1.
Pre-checked for LEED v4.1 Option 1.

Third Party Verified?
- ( ) Yes
- (•) No

PREPARER: Self-Prepared
VERIFIER:
VERIFICATION #:

SCREENING DATE: 2023-07-31
PUBLISHED DATE: 2023-07-31
EXPIRY DATE: 2026-07-31

Section 2: Content in Descending Order of Quantity

This section lists contents in a product based on specific threshold(s) and reports detailed health information including hazards. This HPD uses the inventory method indicated above, which is one of three possible methods:

- *Basic Inventory method with Product-level threshold.*
- *Nested Material Inventory method with Product-level threshold*
- *Nested Material Inventory method with individual Material-level thresholds*

Definitions and requirements for the three inventory methods and requirements for each data field can be found in the HPD Open Standard version 2.3, available on the HPDC website at: www.hpd-collaborative.org/hpd-2-3-standard

HOT-DIP GALVANIZED STEEL %: **86.8600 - 99.6000**

PRODUCT THRESHOLD: 100 ppm RESIDUALS AND IMPURITIES EVALUATION COMPLETED: No MATERIAL TYPE: Metal

RESIDUALS AND IMPURITIES NOTES: No residuals or impurities are known or expected to be present at or above the Content Inventory Threshold. Supplier SDS states the following: "All commercial steel products may contain small amounts of various elements in addition to those specified. These small quantities (less than 0.1%) may exist as intentional additions, or as “trace” or “residual” elements that generally originate in the raw materials used. These elements may include: aluminum, antimony, arsenic, boron, cadmium, calcium, chromium, cobalt, columbium, copper, lead, molybdenum, nickel, silicon, tin, titanium, vanadium, and zirconium.

OTHER MATERIAL NOTES: Cold-Formed Steel is ordered to ASTM specifications per the IBC

STEEL ID: **12597-69-2**

HAZARD DATA SOURCE: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2023-07-31 13:24:32**

%: **86.8600 - 99.6000** GreenScreen: **NoGS** RC: **PostC** NANO: **No** SUBSTANCE ROLE: **Galvanizing**

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists

SUBSTANCE NOTES: 25% Post Consumer recycled content per LEED default value, higher recycled content % may be available.

ZINC (POWDER) ID: **7440-66-6**

HAZARD DATA SOURCE: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2023-07-31 13:24:33**

%: **0.4000 - 10.0000** GreenScreen: **LT-P1** RC: **None** NANO: **No** SUBSTANCE ROLE: **Coating**

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
PHY	EU - GHS (H-Statements) Annex 6 Table 3-1	H260 - In contact with water releases flammable gases which may ignite spontaneously [Substances and mixtures which, in contact with water, emit flammable gases - Category 1]
AQU	EU - GHS (H-Statements) Annex 6 Table 3-1	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
AQU	EU - GHS (H-Statements) Annex 6 Table 3-1	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
PHY	EU - GHS (H-Statements) Annex 6 Table 3-1	H250 - Catches fire spontaneously if exposed to air [Pyrophoric liquids; Pyrophoric solids - Category 1]
PHY	GHS - Australia	H250 - Catches fire spontaneously if exposed to air [Pyrophoric liquids; Pyrophoric solids - Category 1]
PHY	GHS - New Zealand	Pyrophoric solids category 1
PHY	GHS - New Zealand	Self-heating substances and mixtures category 1
PHY	GHS - New Zealand	Substances and mixtures which, in contact with water, emit flammable gases category 1
PHY	GHS - Australia	H260 - In contact with water releases flammable gases which may ignite spontaneously [Substances and mixtures which, in contact with water, emit flammable gases - Category 1]
AQU	GHS - New Zealand	Hazardous to the aquatic environment - acute category 1
AQU	GHS - Japan	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
AQU	GHS - Japan	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
AQU	GHS - Australia	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
AQU	GHS - New Zealand	Hazardous to the aquatic environment - chronic category 1

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Green Science Policy Institute (GSPI)	GSPI - Six Classes of Problematic Chemicals Antimicrobials
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Biological and Environmentally Released Materials
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Children's Products

SUBSTANCE NOTES:

HYDROCHLORIC ACID

ID: **7647-01-0**

HAZARD DATA SOURCE: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2023-07-31 13:24:33**

%: **0.0000 - 3.0000** GreenScreen: **BM-2** RC: **None** NANO: **No** SUBSTANCE ROLE: **Coating**

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
MAM	US EPA - EPCRA Extremely Hazardous Substances	Extremely Hazardous Substances
SKI	EU - GHS (H-Statements) Annex 6 Table 3-1	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1A or 1B or 1C]
MAM	EU - GHS (H-Statements) Annex 6 Table 3-1	H331 - Toxic if inhaled [Acute toxicity (inhalation) - Category 3]
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]
EYE	GHS - New Zealand	Serious eye damage category 1
EYE	GHS - Japan	H318 - Causes serious eye damage [Serious eye damage / eye irritation - Category 1]
SKI	GHS - Japan	H314 - Causes severe skin burns and eye damage [Skin corrosion / irritation - Category 1]
SKI	GHS - Australia	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1A or 1B or 1C]
MAM	GHS - New Zealand	Acute inhalation toxicity category 2
AQU	GHS - Japan	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
AQU	GHS - Korea	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
SKI	GHS - Korea	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1]
SKI	GHS - New Zealand	Skin corrosion category 1B

MAM	GHS - Korea	H301 - Toxic if swallowed [Acute toxicity (oral) - Category 3]
MAM	Québec CSST - WHMIS 1988	Class D1A - Very toxic material causing immediate and serious toxic effects
MAM	GHS - Malaysia	H331 - Toxic if inhaled [Acute toxicity (inhalation) - Category 3]
SKI	GHS - Malaysia	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1A or 1B or 1C]
EYE	GHS - Malaysia	H318 - Causes serious eye damage [Serious eye damage/eye irritation - Category 1]
MAM	GHS - Australia	H331 - Toxic if inhaled [Acute toxicity (inhalation) - Category 3]
MAM	GHS - Japan	H330 - Fatal if inhaled [Acute toxicity (inhalation: dust, mist) - Category 2]
MAM	GHS - Japan	H301 - Toxic if swallowed [Acute Toxicity (oral) - Category 3]
MAM	GHS - Korea	H331 - Toxic if inhaled [Acute toxicity (inhalation) - Category 3]
MAM	GHS - Korea	H335 - May cause respiratory irritation [Specific target organ toxicity - Single exposure - Category 3]
MAM	GHS - Japan	H331 - Toxic if inhaled [Acute toxicity (inhalation: gas) - Category 3]

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Green Science Policy Institute (GSPI)	GSPI - Six Classes of Problematic Chemicals Antimicrobials

SUBSTANCE NOTES:

MINERAL OILS

ID: 8020-83-5

HAZARD DATA SOURCE: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2023-07-31 13:24:34**

%: **0.0000 - 0.1000** GreenScreen: **LT-UNK** RC: **None** NANO: **No** SUBSTANCE ROLE: **Coating**

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists

SUBSTANCE NOTES: Proxy for reported component Petroleum, Natural or Synthetic Oils

POTASSIUM HYDROXIDE

ID: 1310-58-3

HAZARD DATA SOURCE: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2023-07-31 13:24:34**

%: **0.0000 - 0.0100** GreenScreen: **LT-P1** RC: **None** NANO: **No** SUBSTANCE ROLE: **Coating**

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
SKI	EU - GHS (H-Statements) Annex 6 Table 3-1	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1A or 1B or 1C]
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]
EYE	GHS - New Zealand	Serious eye damage category 1
EYE	GHS - Japan	H318 - Causes serious eye damage [Serious eye damage / eye irritation - Category 1]
SKI	GHS - Japan	H314 - Causes severe skin burns and eye damage [Skin corrosion / irritation - Category 1]
SKI	GHS - Australia	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1A or 1B or 1C]
SKI	GHS - Korea	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1]
SKI	GHS - New Zealand	Skin corrosion category 1B
MAM	GHS - Korea	H301 - Toxic if swallowed [Acute toxicity (oral) - Category 3]
MAM	GHS - New Zealand	Acute oral toxicity category 3
MAM	GHS - Japan	H301 - Toxic if swallowed [Acute Toxicity (oral) - Category 3]

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Cosmetics & Personal Care Products

SUBSTANCE NOTES:

CHROMIUM (VI) OXIDE ID: **1333-82-0**

HAZARD DATA SOURCE: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2023-07-31 13:24:36**

%: **0.0000 - 0.0100** GreenScreen: **LT-1** RC: **None** NANO: **No** SUBSTANCE ROLE: **Corrosion inhibitor**

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen
CAN	EU - Annex VI CMRs	Carcinogen Category 1B - Presumed Carcinogen based on animal evidence
SKI	MAK	Sensitizing Substance Sh - Danger of skin sensitization
CAN	MAK	Carcinogen Group 1 - Substances that cause cancer in man
MUL	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant

MUL	German FEA - Substances Hazardous to Waters	Class 3 - Severe Hazard to Waters
CAN	IARC	Group 1 - Agent is Carcinogenic to humans
CAN	CA EPA - Prop 65	Carcinogen
CAN	US NIH - Report on Carcinogens	Known to be a human Carcinogen
DEV	CA EPA - Prop 65	Developmental toxicity
CAN	EU - Annex VI CMRs	Carcinogen Category 1A - Known human Carcinogen based on human evidence
GEN	EU - Annex VI CMRs	Mutagen - Category 1B
REP	CA EPA - Prop 65	Reproductive Toxicity - Female
REP	CA EPA - Prop 65	Reproductive Toxicity - Male
GEN	MAK	Germ Cell Mutagen 2
CAN	GHS - Australia	H350 - May cause cancer [Carcinogenicity - Category 1A or 1B]
CAN	GHS - Japan	H350 - May cause cancer [Carcinogenicity - Category 1A]
GEN	GHS - Japan	H340 - May cause genetic defects [Germ cell mutagenicity - Category 1B]
REP	GHS - Japan	H360 - May damage fertility or the unborn child [Toxic to reproduction - Category 1B]
REP	GHS - Australia	H360FD - May damage fertility. May damage the unborn child [Reproductive toxicity - Category 1A or 1B]
CAN	GHS - Korea	H350 - May cause cancer [Carcinogenicity - Category 1]
CAN	EU - GHS (H-Statements) Annex 6 Table 3-1	H350 - May cause cancer [Carcinogenicity - Category 1A or 1B]
SKI	EU - GHS (H-Statements) Annex 6 Table 3-1	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1A or 1B or 1C]
MAM	EU - GHS (H-Statements) Annex 6 Table 3-1	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]
GEN	EU - GHS (H-Statements) Annex 6 Table 3-1	H340 - May cause genetic defects [Germ cell mutagenicity - Category 1A or 1B]
AQU	EU - GHS (H-Statements) Annex 6 Table 3-1	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
AQU	EU - GHS (H-Statements) Annex 6 Table 3-1	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
MAM	EU - GHS (H-Statements) Annex 6 Table 3-1	H301 - Toxic if swallowed [Acute toxicity (oral) - Category 3]
MAM	EU - GHS (H-Statements) Annex 6 Table 3-1	H311 - Toxic in contact with skin [Acute toxicity (dermal) - Category 3]
MAM	EU - GHS (H-Statements) Annex 6 Table 3-1	H330 - Fatal if inhaled [Acute toxicity (inhalation) - Category 1 or 2]
REP	EU - GHS (H-Statements) Annex 6 Table 3-1	H361f - Suspected of damaging fertility [Reproductive toxicity - Category 2]

PHY	EU - GHS (H-Statements) Annex 6 Table 3-1	H271 - May cause fire or explosion; strong oxidiser [Oxidizing liquids; Oxidizing solids - Category 1]
CAN	EU - GHS (H-Statements) Annex 6 Table 3-1	H350i - May cause cancer by inhalation [Carcinogenicity - Category 1A or 1B]
CAN	GHS - New Zealand	Carcinogenicity category 1
GEN	GHS - New Zealand	Germ cell mutagenicity category 1
REP	GHS - New Zealand	Reproductive toxicity category 1
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]
MAM	GHS - Australia	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]
MAM	GHS - New Zealand	Specific target organ toxicity - repeated exposure category 1
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]
EYE	GHS - New Zealand	Serious eye damage category 1
EYE	GHS - Japan	H318 - Causes serious eye damage [Serious eye damage / eye irritation - Category 1]
SKI	GHS - Japan	H314 - Causes severe skin burns and eye damage [Skin corrosion / irritation - Category 1]
SKI	GHS - Australia	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1A or 1B or 1C]
SKI	GHS - New Zealand	Skin sensitisation category 1
MAM	GHS - New Zealand	Acute inhalation toxicity category 2
AQU	GHS - New Zealand	Hazardous to the aquatic environment - acute category 1
AQU	GHS - Japan	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
AQU	GHS - Japan	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
AQU	GHS - Australia	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
AQU	GHS - New Zealand	Hazardous to the aquatic environment - chronic category 1
AQU	GHS - Korea	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
AQU	GHS - Korea	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
REP	GHS - Korea	H361 - Suspected of damaging fertility or the unborn child [Reproductive toxicity - Category 2]

SKI	GHS - Korea	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1]
SKI	GHS - New Zealand	Skin corrosion category 1B
REP	EU - Annex VI CMRs	Reproductive Toxicity - Category 2
MAM	GHS - Korea	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - Repeated exposure - Category 1]
MAM	GHS - Korea	H301 - Toxic if swallowed [Acute toxicity (oral) - Category 3]
GEN	GHS - Korea	H341 - Suspected of causing genetic defects [Germ cell mutagenicity - Category 2]
MAM	Québec CSST - WHMIS 1988	Class D1A - Very toxic material causing immediate and serious toxic effects
MAM	GHS - Australia	H301 - Toxic if swallowed [Acute toxicity (oral) - Category 3]
MAM	GHS - Australia	H311 - Toxic in contact with skin [Acute toxicity (dermal) - Category 3]
MAM	GHS - New Zealand	Acute oral toxicity category 3
MAM	GHS - Korea	H330 - Fatal if inhaled [Acute toxicity (inhalation) - Category 2]
MAM	GHS - Australia	H330 - Fatal if inhaled [Acute toxicity (inhalation) - Category 1 or 2]
MAM	GHS - Japan	H330 - Fatal if inhaled [Acute toxicity (inhalation: dust, mist) - Category 2]
MAM	GHS - Japan	H301 - Toxic if swallowed [Acute Toxicity (oral) - Category 3]
MAM	GHS - Korea	H310 - Fatal in contact with skin [Acute toxicity (dermal) - Category 1]
MAM	GHS - New Zealand	Acute dermal toxicity category 2
PHY	GHS - Japan	H272 - May intensify fire; oxidizer [Oxidizing solids - Category 2]
PHY	GHS - Australia	H271 - May cause fire or explosion; strong oxidiser [Oxidizing liquids; Oxidizing solids - Category 1]
PHY	GHS - New Zealand	Oxidising solids category 2
MAM	GHS - Japan	H310 - Fatal in contact with skin [Acute Toxicity (dermal) - Category 2]
PHY	GHS - Korea	H272 - May intensify fire; oxidizer [Oxidizing solids - Category 2]
MAM	GHS - Korea	H335 - May cause respiratory irritation [Specific target organ toxicity - Single exposure - Category 3]
GEN	EU - SVHC List	Mutagenic - Candidate list
CAN	EU - SVHC List	Carcinogenic - Banned unless Authorised
CAN	EU - REACH Annex XVII CMRs	Carcinogens: Category 1B
GEN	EU - REACH Annex XVII CMRs	Germ cell mutagens: Category 1B

CAN	EU - REACH Annex XVII CMRs	Carcinogens: Category 1A
CAN	EU - SVHC List	Carcinogenic - Candidate list
GEN	EU - SVHC List	Mutagenic - Banned unless Authorised

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Perkins+Will (P+W)	P&W - Precautionary List Precautionary list of substances recommended for avoidance
RESTRICTED LIST	Green Science Policy Institute (GSPI)	GSPI - Six Classes of Problematic Chemicals Antimicrobials
RESTRICTED LIST	Green Science Policy Institute (GSPI)	GSPI - Six Classes of Problematic Chemicals Certain Metals
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Core Restrictions
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Biological and Environmentally Released Materials
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Children's Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Formulated Consumer Products
RESTRICTED LIST	International Living Future Institute (ILFI)	Living Building Challenge 4.0 - Red List of Materials & Chemicals - Effective April 1, 2023 Red List substances to avoid in Living Building Challenge V4.0 projects

SUBSTANCE NOTES: Galvanized steel typically leaves the mill with a passivation (anti-corrosion) coating. The passivant substances indicated in this HPD represent a standard mixture whose total percentage by mass is less than 0.01% compared to the product. Steel coated with an alternative, Cr6-free passivant can be obtained. Extended lead-times will apply, and products without passivant are more susceptible to corrosion.

PHOSPHORIC ACID ID: **7664-38-2**

HAZARD DATA SOURCE: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2023-07-31 13:24:36**

%: **0.0000 - 0.0100** GreenScreen: **LT-P1** RC: **None** NANO: **No** SUBSTANCE ROLE: **Corrosion inhibitor**

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
SKI	EU - GHS (H-Statements) Annex 6 Table 3-1	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1A or 1B or 1C]
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]
EYE	GHS - Japan	H318 - Causes serious eye damage [Serious eye damage / eye irritation - Category 1]
SKI	GHS - Japan	H314 - Causes severe skin burns and eye damage [Skin corrosion / irritation - Category 1]
SKI	GHS - Australia	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1A or 1B or 1C]

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Green Science Policy Institute (GSPI)	GSPI - Six Classes of Problematic Chemicals Antimicrobials

SUBSTANCE NOTES: Galvanized steel typically leaves the mill with a passivation (anti-corrosion) coating. The passivant substances indicated in this HPD represent a standard mixture whose total percentage by mass is less than 0.01% compared to the product. Steel coated with an alternative, Cr6-free passivant can be obtained. Extended lead-times will apply, and products without passivant are more susceptible to corrosion.

Section 3: Certifications and Compliance

This section lists applicable certification and standards compliance information for VOC emissions and VOC content. Other types of health or environmental performance testing or certifications completed for the product may be provided.

VOC EMISSIONS — **Inherently non-emitting source per LEED**

CERTIFYING PARTY: Self-declared
APPLICABLE FACILITIES: East Chicago, IN; South Plainfield, NJ; Griffin, GA
CERTIFICATE URL:

ISSUE DATE: 2023-07-31
EXPIRY DATE:

CERTIFIER OR LAB: None

CERTIFICATION AND COMPLIANCE NOTES: Inherently non-emitting per LEED®

LCA — **Environmental Product Declaration (EPD) by UL**

CERTIFYING PARTY: Third Party
APPLICABLE FACILITIES: East Chicago, IN; South Plainfield, NJ; Griffin, GA
CERTIFICATE URL:

ISSUE DATE: 2021-07-01
EXPIRY DATE: 2026-06-30

CERTIFIER OR LAB: UL Environment

CERTIFICATION AND COMPLIANCE NOTES:

Section 4: Accessories

This section lists related products or materials that the manufacturer requires or recommends for installation (such as adhesives or fasteners), maintenance, cleaning, or operations. For information relating to the contents of these related products, refer to their applicable Health Product Declarations, if available.

STEEL TAPPING OR SELF DRILLING SCREWS FOR COLD-FORMED STEEL
MANUFACTURER (OR GENERIC): **Generic**

HPD URL: No HPD Available
ACCESSORY TYPE: Fastner
CONDITION WHEN RECOMMENDED OR REQUIRED AND/OR OTHER NOTES: Used to connect framing members together

Section 5: General Notes

Steel products processed by Marino\WARE are not hazardous per OSHA GHS 29 CFR 1910, 1915, 1926. However, individual customer processes (such as welding, sawing during installation at the job site) may result in the formation of fumes, dust (combustible or otherwise) and/or particulate that may present the following hazards: OSHA HAZARDS: Carcinogen; Skin Sensitizer; Target Organ Effect – Lungs; GHS CLASSIFICATION: Carcinogenicity (Category 2); Skin Sensitization (Category 1); Specific Target Organ Toxicity-Repeated Exposure (Category 1); HAZARD STATEMENT(S): H317 Dust/fumes may cause an allergic skin reaction; H351 Dust/fumes suspected of causing cancer via inhalation; H372 Inhalation of dust/fumes causes damage to respiratory tract through prolonged or repeated exposure; PRECAUTIONARY STATEMENT(S): P202 Do not handle until all safety precautions have been read and understood; P261: Avoid breathing dust/fumes; P281 Use personal protective equipment as required; P308+P313 If exposed or concerned: Get medical advice/attention.

Section 6: References

MANUFACTURER INFORMATION

MANUFACTURER: **Marino\WARE**
ADDRESS: **100 Hendrick Drive**
Suite 200
McDonough GA 30253, United States
WEBSITE: **www.marinoware.com**

CONTACT NAME: **Technical Services**
TITLE: **Technical Services**
PHONE: **(866) 545-15454**
EMAIL: **technicalservices@marinoware.com**

The listed contact is responsible for the validity of this HPD and attests that it is accurate and complete to the best of his or her knowledge.

KEY

Hazard Types

AQU Aquatic toxicity
CAN Cancer
DEV Developmental toxicity
END Endocrine activity
EYE Eye irritation/corrosivity
GEN Gene mutation
GLO Global warming
LAN Land toxicity
MAM Mammalian/systemic/organ toxicity
MUL Multiple
NEU Neurotoxicity
NF Not found on Priority Hazard Lists
OZO Ozone depletion
PBT Persistent, bioaccumulative, and toxic
PHY Physical hazard (flammable or reactive)
REP Reproductive
RES Respiratory sensitization
SKI Skin sensitization/irritation/corrosivity
UNK Unknown

GreenScreen (GS)

BM-4 Benchmark 4 (prefer-safer chemical)
BM-3 Benchmark 3 (use but still opportunity for improvement)
BM-2 Benchmark 2 (use but search for safer substitutes)
BM-1 Benchmark 1 (avoid - chemical of high concern)
BM-U Benchmark Unspecified (due to insufficient data)
LT-P1 List Translator Possible 1 (Possible Benchmark-1)
LT-1 List Translator 1 (Likely Benchmark-1)
LT-UNK List Translator Benchmark Unknown
NoGS No GreenScreen.

GreenScreen Benchmark scores sometimes also carry subscripts, which provide more context for how the score was determined. These are DG (data gap), TP (transformation product), and CoHC (chemical of high concern). For more information, see 2.2.2.4 GreenScreen® for Safer Chemicals, www.greenscreenchemicals.org, and Best Practices for Hazard Screening on the HPDC website (hpd-collaborative.org).

Recycled Types

PreC Pre-consumer recycled content
PostC Post-consumer recycled content
UNK Inclusion of recycled content is unknown
None Does not include recycled content

Other Terms:

GHS SDS Globally Harmonized System of Classification and Labeling of Chemicals Safety Data Sheet

Inventory Methods:

Nested Method / Material Threshold Substances listed within each material per threshold indicated per material
Nested Method / Product Threshold Substances listed within each material per threshold indicated per product
Basic Method / Product Threshold Substances listed individually per threshold indicated per product

Nano Composed of nano scale particles or nanotechnology
Third Party Verified Verification by independent certifier approved by HPDC
Preparer Third party preparer, if not self-prepared by manufacturer
Applicable facilities Manufacturing sites to which testing applies

The Health Product Declaration (HPD) Open Standard provides for the disclosure of product contents and potential associated human and environmental health hazards. Hazard associations are based on the HPD Priority Hazard Lists, the GreenScreen List Translator™, and when available, full GreenScreen® assessments. The HPD Open Standard v2.1 is not:

- *a method for the assessment of exposure or risk associated with product handling or use,*
- *a method for assessing potential health impacts of: (i) substances used or created during the manufacturing process or (ii) substances created after the product is delivered for end use.*

Information about life cycle, exposure and/or risk assessments performed on the product may be reported by the manufacturer in appropriate Notes sections, and/or, where applicable, in the Certifications section.

The HPD Open Standard was created and is supported by the Health Product Declaration Collaborative (the HPD Collaborative), a customer-led organization composed of stakeholders throughout the building industry that is committed to the continuous improvement of building products through transparency, openness, and innovation throughout the product supply chain.

The product manufacturer and any applicable independent verifier are solely responsible for the accuracy of statements and claims made in this

HPD and for compliance with the HPD standard noted.