REINFORCING STEEL IN BARS AND COILS
by ArcelorMittal Brazil

Health Product Declaration v2.2
created via: HPDC Online Builder

HPD UNIQUE IDENTIFIER: 28136
CLASSIFICATION: 03 21 00 Reinforcement Bars
PRODUCT DESCRIPTION: Rebar is short for reinforcing (steel) bar, used for the reinforcement of concrete according to EN10080 standard (as weldable reinforcing steel in bars and coils). For the use and application of the product, the respective national provisions at the place of use apply, being ABNT NBR 6118, ABNT NBR 7480, ISO 15630, NB 732, NTP 339, NTP 341, NCh 204, NTC 2289, IRAM 500-207, IRAM 500-528, PNA 4-007-99, FONDONORMA 316, ASTM A615, ASTM A706.

Section 1: Summary

Basic 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
- ◉ Considered
- ○ Partially Considered
- ○ Not Considered

Explanation(s) provided for Residuals/Impurities?
- ◉ Yes ○ No

All Substances Above the Threshold Indicated Are:

Characterized ○ Yes Ex/SC ◉ Yes ○ No
% weight and role provided for all substances.

Screened ○ Yes Ex/SC ◉ Yes ○ No
All substances screened using Priority Hazard Lists with results disclosed.

Identified ○ Yes Ex/SC ○ Yes ◉ No
One or more substances not disclosed by Name (Specific or Generic) and Identifier and/ or one or more Special Condition did not follow guidance.

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.

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

REINFORCING STEEL IN BARS AND COILS [IRON LT-P1 | END MANGANESE LT-P1 | END | MUL | REP SILICON LT-UNK CARBON LT-UNK VANADIUM LT-1 | MUL | CAN | GEN *PHOSPHORUS* BM-2 | MAM | PHY *SULFUR* LT-UNK | SKI *ALUMINUM* BM-1 | END | RES | PHY *CHROMIUM* LT-P1 | END | SKI | RES *COPPER* LT-P1 | GEN *NITROGEN* NoGS *NICKEL* LT-1 | CAN | RES | MUL | SKI | MAM *MOLYBDENUM* LT-UNK *TIN* LT-UNK *TITANIUM* LT-UNK *ZINC* LT-P1 | END | MUL | PHY | AQU *BORON* LT-UNK NIOBIUM LT-UNK]

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

Contents highest concern GreenScreen Benchmark or List translator Score ... BM-1

Nanomaterial ... No

INVENTORY AND SCREENING NOTES:

This HPD has been prepared using a Basic Inventory method with a product threshold of 100 ppm. The content inventory includes ranges to encompass products by ArcelorMittal Brazil: Reinforcing Steel in Bars and Coils. The products made by ArcelorMittal Brazil contain materials with Special Conditions (metal alloy ingredients) as per the HPDC. Guidelines for reporting Special Conditions materials are still under development by HPDC. ArcelorMittal Brazil will update the HPD accordingly once these guidelines get published. Substances present in the products, as well as known residuals and impurities, have been disclosed at 100 ppm. Additional details about how residuals and impurities were considered are available in the appropriate section.

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 IBU (Arbeitsgemeinschaft Umweltverträgliches Bauprodukt E.V.(AUB)

CONSISTENCY WITH OTHER PROGRAMS

No pre-checks completed or disclosed.

Third Party Verified?
- ○ Yes
- ◉ No

PREPARER: Self-Prepared
VERIFIER:
VERIFICATION #:

SCREENING DATE: 2022-03-23
PUBLISHED DATE: 2022-04-08
EXPIRY DATE: 2025-03-23

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 2.2, available on the HPDC website at: www.hpd-collaborative.org/hpd-2-2-standard

REINFORCING STEEL IN BARS AND COILS

PRODUCT THRESHOLD: 100 ppm

RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: All known residuals or impurities above 100 ppm were disclosed in the content inventory as such. The impurities are essentially introduced through recycled scrap metal. The type and quantity of impurities are determined by ArcelorMittal Brasil through chemical analysis of production samples.

OTHER PRODUCT NOTES:

IRON

ID: 7439-89-6

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**

HAZARD SCREENING DATE: **2022-03-23 5:22:43**

%: **95.4000 - 99.5000**

GS: **LT-P1**

RC: **Both**

NANO: **No**

SUBSTANCE ROLE: **Structure component**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: None.

MANGANESE

ID: 7439-96-5

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**

HAZARD SCREENING DATE: **2022-03-23 7:52:23**

%: **0.4000 - 1.5000**

GS: **LT-P1**

RC: **None**

NANO: **No**

SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
REP	GHS - Japan	H360 - May damage fertility or the unborn child [Toxic to reproduction - Category 1B]

SUBSTANCE NOTES: None.

SILICON

ID: 7440-21-3

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**

HAZARD SCREENING DATE: **2022-03-23 5:26:10**

%: **0.1000 - 0.5000**

GS: **LT-UNK**

RC: **None**

NANO: **No**

SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: None.

CARBON

ID: 7440-44-0

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:23:31**

%: **0.0800 - 0.3800** GS: **LT-UNK** RC: **None** NANO: **No** SUBSTANCE ROLE: **Structure component**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: None.

VANADIUM

ID: 7440-62-2

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:26:47**

%: **0.0000 - 0.1200** GS: **LT-1** RC: **None** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
MUL	German FEA - Substances Hazardous to Waters	Class 3 - Severe Hazard to Waters
CAN	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
GEN	MAK	Germ Cell Mutagen 2

SUBSTANCE NOTES: None.

PHOSPHORUS

ID: 7723-14-0

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:29:14**

%: **Impurity/Residual** GS: **BM-2** RC: **None** NANO: **No** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
MAM	US EPA - EPCRA Extremely Hazardous Substances	Extremely Hazardous Substances
PHY	EU - GHS (H-Statements) Annex 6 Table 3-1	H228 - Flammable solid [Flammable solids - Category 1 or 2]

SUBSTANCE NOTES: None.

SULFUR

ID: 7704-34-9

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:30:20**

%: **Impurity/Residual** GS: **LT-UNK** RC: **None** NANO: **No** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
SKI	EU - GHS (H-Statements) Annex 6 Table 3-1	H315 - Causes skin irritation [Skin corrosion/irritation - Category 2]

SUBSTANCE NOTES: None.

ALUMINUM

ID: 7429-90-5

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:33:00**

%: **Impurity/Residual** GS: **BM-1** RC: **None** NANO: **No** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
RES	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
PHY	EU - GHS (H-Statements) Annex 6 Table 3-1	H228 - Flammable solid [Flammable solids - Category 1 or 2]
PHY	EU - GHS (H-Statements) Annex 6 Table 3-1	H261 - In contact with water releases flammable gases [Substances and mixtures which, in contact with water, emit flammable gases - Category 2 or 3]

SUBSTANCE NOTES: None.

CHROMIUM

ID: 7440-47-3

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:33:58**

%: **Impurity/Residual** GS: **LT-P1** RC: **None** NANO: **No** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
SKI	MAK	Sensitizing Substance Sh - Danger of skin sensitization
RES	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced

SUBSTANCE NOTES: None.

COPPER

ID: 7440-50-8

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:34:57**

%: **Impurity/Residual** GS: **LT-P1** RC: **None** NANO: **No** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
GEN	GHS - New Zealand	Germ cell mutagenicity category 1

SUBSTANCE NOTES: None.

NITROGEN

ID: 7727-37-9

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:35:34**

%: **Impurity/Residual** GS: **NoGS** RC: **None** NANO: **No** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: None.

NICKEL

ID: 8049-31-8

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:36:22**

%: **Impurity/Residual** GS: **LT-1** RC: **None** NANO: **No** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen
CAN	MAK	Carcinogen Group 1 - Substances that cause cancer in man
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
CAN	IARC	Group 2b - Possibly carcinogenic to humans
RES	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
CAN	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
RES	MAK	Sensitizing Substance Sah - Danger of airway & skin sensitization
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
SKI	EU - GHS (H-Statements) Annex 6 Table 3-1	H317 - May cause an allergic skin reaction [Skin sensitization - Category 1]
CAN	EU - GHS (H-Statements) Annex 6 Table 3-1	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]
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]

SUBSTANCE NOTES: None.

MOLYBDENUM

ID: 7439-98-7

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:37:31**

%: **Impurity/Residual** GS: **LT-UNK** RC: **None** NANO: **No** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: None.

TIN

ID: 7440-31-5

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:38:28**

%: **Impurity/Residual** GS: **LT-UNK** RC: **None** NANO: **No** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: None.

TITANIUM

ID: 7440-32-6

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:39:24**

%: **Impurity/Residual** GS: **LT-UNK** RC: **None** NANO: **No** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: None.

ZINC

ID: 7440-66-6

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:40:07**

%: **Impurity/Residual** GS: **LT-P1** RC: **None** NANO: **No** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	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]

SUBSTANCE NOTES: None.

BORON

ID: 7440-42-8

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:40:53**

%: **Impurity/Residual** GS: **LT-UNK** RC: **None** NANO: **No** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: None.

NIOBIUM

ID: 7440-03-1

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 5:25:24**

%: **0.0000 - 0.1200** GS: **LT-UNK** RC: **None** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: None.

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: All ArcelorMittal Brazil plants.
CERTIFICATE URL:
ISSUE DATE: 2022-03-31
EXPIRY DATE:
CERTIFIER OR LAB: None

CERTIFICATION AND COMPLIANCE NOTES: Metals as well as powder-coated metals, plated or anodized metals are inherently nonemitting sources of VOCs, as per LEED® v4.

LCA	Environmental Product Declaration (EPD) by IBU (Arbeitsgemeinschaft Umweltverträgliches Bauprodukt E.V.(AUB)

CERTIFYING PARTY: Third Party
APPLICABLE FACILITIES: All ArcelorMittal Brazil plants.
CERTIFICATE URL: https://ibu-epd.com/en/
ISSUE DATE: 2021-07-26
EXPIRY DATE: 2026-07-25
CERTIFIER OR LAB: Institut Bauen und Umwelt e.V. (IBU)

CERTIFICATION AND COMPLIANCE NOTES: Product Specific EPD for Reinforcing steel in bars produced by ArcelorMittal Brazil. The EPD was prepared and published by Institut Bauen und Umwelt e.V. (IBU). The EPD number is EPD-ARM-20210054-CBC1-EN.

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.

No accessories are required for this product.

Section 5: General Notes

REINFORCING STEEL IN BARS AND COILS are produced in accordance with the following standards:
- ABNT NBR 6118, ABNT NBR 7480
- ISO 15630
- NB 732, NTP 339, NTP 341, NCh 204, NTC 2289
- IRAM 500-207, IRAM 500-528, PNA 4-007-99, FONDONORMA 316
- ASTM A615, ASTM A706

Section 6: References

MANUFACTURER INFORMATION

MANUFACTURER: **ArcelorMittal Brazil**
ADDRESS: **Av. Carandaí, 1115 (16º andar)**
Belo Horizonte (MG) 30130-915, Brazil
WEBSITE: **https://brasil.arcelormittal.com/**

CONTACT NAME: **Guilherme Corrêa Abreu**
TITLE: **General Manager Institutional Relations and Sustainability**
PHONE: **(31) 3219-1288**
EMAIL: **guilherme.abreu@arcelormittal.com.br**

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 (the chemical is present on at least one GreenScreen Specified List, but the information contained within the list did not result in a clear mapping to a LT-1 or LTP1 score.)
NoGS No GreenScreen.

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.