DRAMIX STEEL FIBERS
by ArcelorMittal Brazil

Health Product Declaration v2.2

created via: HPDC Online Builder

HPD UNIQUE IDENTIFIER: 28138
CLASSIFICATION: 03 24 00 Fibrous Reinforcing
PRODUCT DESCRIPTION: Produced from drawn steel wires whose raw material is ArcelorMittal machine wire, Dramix steel fibers are sold in different lengths and diameters, in combs with the fibers glued together or in loose fibers, depending on the use. Its function is to reinforce concrete, completely replacing traditional reinforcement in the following applications: industrial floors and pavements, tunnel linings (shot concrete, segmented rings) and prefabricated elements (concrete pipes, refractories, plates, vaults).

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

DRAMIX STEEL FIBERS [IRON LT-P1 | END *MANGANESE* LT-P1 | END | MUL | REP *ALUMINUM* BM-1 | END | RES | PHY *BORON* LT-UNK *SILICON* LT-UNK CARBON LT-UNK *MOLYBDENUM* LT-UNK *NICKEL* LT-1 | CAN | RES | MUL | SKI | MAM *NITROGEN* NoGS *SULFUR* LT-UNK | SKI *PHOSPHORUS* BM-2 | MAM | PHY]

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 product by ArcelorMittal Brazil: Dramix Steel Fibers. The product 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 product, 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®

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

DRAMIX STEEL FIBERS

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 7:41:45**

%: **99.2000 - 99.8000** 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 7:47:32**

%: **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
REP	GHS - Japan	H360 - May damage fertility or the unborn child [Toxic to reproduction - Category 1B]

SUBSTANCE NOTES: None.

ALUMINUM ID: 7429-90-5

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 7:41:49**

%: **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.

BORON

ID: 7440-42-8

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 7:41:54**

%: **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.

SILICON

ID: 7440-21-3

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 7:41:46**

%: **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.

CARBON

ID: 7440-44-0

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 7:41:47**

%: **0.0000 - 0.0500** 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.

MOLYBDENUM

ID: 7439-98-7

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 7:41:52**

%: **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.

NICKEL

ID: 8049-31-8

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 7:41:52**

%: **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.

NITROGEN

ID: 7727-37-9

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 7:41:51**

%: **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.

SULFUR

ID: 7704-34-9

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 7:41:49**

%: **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.

PHOSPHORUS

ID: **7723-14-0**

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2022-03-23 7:41:48**

%: **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.

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
ISSUE DATE: 2022-03-31
EXPIRY DATE:
CERTIFIER OR LAB: None
APPLICABLE FACILITIES: ArcelorMittal Sabará plant.
CERTIFICATE URL:

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.

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

DRAMIX STEEL FIBERS are produced in accordance with the following standards:
- ABNT NBR 15530, ABNT NBR 16935
- EN14651

Section 6: References

MANUFACTURER INFORMATION

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

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.