Evolution Floor Box + Cover EFB45 by Legrand

Health Product Declaration v2.1

created via: HPDC Online Builder

CLASSIFICATION: 26 05 33.16 Electrical - Boxes for Electrical Systems

PRODUCT DESCRIPTION: 1. Evolution Series Floor Boxes are designed to work in concrete, raised and wood floor applications and are fully adjustable both pre- and post-concrete pour. A single box can be specified for multiple floor types without having to order additional components or accessories. 2. EFB45 Series Floor Boxes for use with Evolution Series EFB45 Floor Box Covers and Floor Box Accessories 3. Evolution Series Floor Boxes are designed for every type of floor construction. They can be installed before or after the floor covering has been put down and they are fully adjustable pre and post concrete pour. In addition, all boxes are TopGuard™ protected, keeping out water, dirt and debris. 4. The cover assemblies are designed to sit flush with the finished floors such as: carpet, tile, and wood. In order to make the cover assembly flush with the polished concrete or terrazzo floor the EFB45-CTR (concrete/terrazzo) ring must be used. Trim flange is designed to meet the ADA Accessibility Guidelines as it pertains to ADA Standard 4.5, which addresses the change in floor and ground surface levels.

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
- ( ) Per OSHA MSDS
- ( ) Other

Residuals/Impurities

Residuals/Impurities Considered in 18 of 18 Materials

Explanation(s) provided for Residuals/Impurities?

- (•) Yes ( ) No

Are All Substances Above the Threshold Indicated:

Characterized (•) Yes ( ) No

Percent Weight and Role Provided?

Screened (•) Yes ( ) No

Using Priority Hazard Lists with Results Disclosed?

Identified ( ) Yes (•) No

Name and Identifier Provided?

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

ALUMINUM 383 [ALUMINUM LT-P1 | RES | PHY | END SILICON LT-UNK ZINC LT-P1 | AQU | PHY | END | MUL COPPER LT-UNK MANGANESE LT-P1 | END | MUL | REP MAGNESIUM LT-UNK | PHY *IRON* LT-P1 | END NICKEL LT-1 | RES | CAN | SKI | MAM | MUL TIN LT-UNK] SHEET METAL BOX - STEEL [IRON LT-P1 | END MANGANESE LT-P1 | END | MUL | REP ALUMINUM LT-P1 | RES | PHY | END *PHOSPHORUS* BM-2 | PHY | MAM COPPER LT-UNK NICKEL LT-1 | RES | CAN | SKI | MAM | MUL *TIN* LT-UNK TITANIUM LT-UNK SILICON LT-UNK *BORON* LT-UNK VANADIUM LT-1 | MUL | CAN | GEN CARBON LT-UNK *CALCIUM* LT-P1 | PHY CHROMIUM LT-P1 | RES | END | SKI ZINC LT-P1 | AQU | PHY | END | MUL *SULFUR* LT-UNK | SKI] ZINC CASTING - ZAMAC 3 [ZINC LT-P1 | AQU | PHY | END | MUL ALUMINUM LT-P1 | RES | PHY | END COPPER LT-UNK *IRON* LT-P1 | END MAGNESIUM LT-UNK | PHY *LEAD* LT-1 | DEL | CAN | PBT | REP | MUL | END | GEN CADMIUM LT-1 | CAN | DEL | PBT | REP | AQU | PHY | MAM | GEN | MUL | END TIN LT-UNK] LEXAN 940 [POLYCARBONATE (POLYCARBONATE) LT-UNK 2-(2H-BENZOTRIAZOL-2-YL)-4-(TERT-BUTYL)-6-(SEC-BUTYL)PHENOL (2-(2H-BENZOTRIAZOL-2-YL)-4-(TERT-BUTYL)-6-(SEC-BUTYL)PHENOL) LT-1 | PBT | MUL STEARIC ACID, TETRAESTER WITH PENTAERYTHRITOL (STEARIC ACID, TETRAESTER WITH PENTAERYTHRITOL) NoGS TRIS(2,4-DI-TERT-BUTYLPHENYL) PHOSPHITE (TRIS(2,4-DI-TERT-BUTYLPHENYL) PHOSPHITE) LT-UNK | PBT] MOLDED SILICON (LIQUID) AG LR3003 [SILOXANES AND SILICONES, DI-ME, HYDROXY-TERMINATED BM-2 SILICA, AMORPHOUS

Number of Greenscreen BM-4/BM3 contents ... 1

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

Nanomaterial ... No

INVENTORY AND SCREENING NOTES:

All substances were screened to the 1000 ppm threshold. Impurities and Residuals were considered for all materials. This product has multiple powder coat finish options. In an effort to represent this, the powder coat material in the inventory represents two of the powder coat finish options. Due to the proprietary nature of powder coats, this material has some undisclosed substances which were still screened against the Priority Hazards Lists with results disclosed. Materials Lexan 940, GEON M3900, HT800 CELLULAR SILICONE, AG LR3003 are representative based on publicly available information. No manufacturer specific data was available for this HPD.

LT-P1 | CAN POLYDIMETHYLSILOXANES LT-P1 | PBT METHYLSILANETRIOL TRIACETATE LT-UNK OCTAMETHYLCYCLOTETRASILOXANE (D4) BM-1 | END | PBT | MUL | REP CARBON BLACK LT-1 | CAN DIBUTYLTIN DILAURATE LT-1 | PBT | GEN | REP | MAM | MUL | END | CAN | DEL] GEON M3900 [POLYVINYL CHLORIDE (PVC) LT-P1 | RES TIN LT-UNK] UNDISCLOSED [POLYESTER (POLYESTER) NoGS ALUMINA TRIHYDRATE BM-2 | RES 2-PROPENOIC ACID, POLYMER WITH BUTYL 2-PROPENOATE LT-UNK BARIUM SULFATE (BARIUM SULFATE) BM-2 | CAN TITANIUM DIOXIDE LT-1 | CAN | END TRIGLYCIDYL ISOCYANURATE (TGIC) (TRIGLYCIDYL ISOCYANURATE (TGIC)) LT-1 | RES | GEN | MAM | SKI | EYE | MUL IRON OXIDE (IRON OXIDE) LT-UNK | CAN CARBON BLACK LT-1 | CAN] LOW CARBON ALLOY STEEL [IRON LT-P1 | END MANGANESE LT-P1 | END | MUL | REP ZINC LT-P1 | AQU | PHY | END | MUL SILICON LT-UNK COPPER LT-UNK CARBON LT-UNK SULFUR LT-UNK | SKI PHOSPHORUS BM-2 | PHY | MAM] ALUMINUM 6061-T6 [6061 ALUMINUM LT-P1 | RES | PHY | END MAGNESIUM LT-UNK | PHY SILICON LT-UNK COPPER LT-UNK CHROMIUM LT-P1 | RES | END | SKI *IRON* LT-P1 | END MANGANESE LT-P1 | END | MUL | REP TITANIUM LT-UNK ZINC LT-P1 | AQU | PHY | END | MUL] LOW CARBON STEEL WIRE [IRON LT-P1 | END MANGANESE LT-P1 | END | MUL | REP CARBON LT-UNK *PHOSPHORUS* BM-2 | PHY | MAM *SULFUR* LT-UNK | SKI] BRASS [COPPER LT-UNK ZINC LT-P1 | AQU | PHY | END | MUL LEAD LT-1 | DEL | CAN | PBT | REP | MUL | END | GEN IRON LT-P1 | END] HT800 CELLULAR SILICONE W 3M- FOAM/RIGID [POLYDIMETHYL SILOXANE LT-P1 | PBT] HEAT-TREATED CARBON STEEL, ZINC PLATED [IRON LT-P1 | END MANGANESE LT-P1 | END | MUL | REP CARBON LT-UNK *PHOSPHORUS* BM-2 | PHY | MAM *SULFUR* LT-UNK | SKI ZINC LT-P1 | AQU | PHY | END | MUL] STAINLESS STEEL 300-347 [IRON LT-P1 | END CHROMIUM LT-P1 | RES | END | SKI NICKEL LT-1 | RES | CAN | SKI | MAM | MUL MOLYBDENUM LT-UNK MANGANESE LT-P1 | END | MUL | REP SILICON LT-UNK CARBON LT-UNK PHOSPHORUS BM-2 | PHY | MAM SULFUR LT-UNK | SKI] AISI 1075 STEEL (SPRING) [IRON LT-P1 | END CARBON LT-UNK MANGANESE LT-P1 | END | MUL | REP *PHOSPHORUS* BM-2 | PHY | MAM *SULFUR* LT-UNK | SKI] WIRE [IRON LT-P1 | END CARBON LT-UNK MANGANESE LT-P1 | END | MUL | REP *SILICON* LT-UNK PHOSPHORUS BM-2 | PHY | MAM *SULFUR* LT-UNK | SKI] ECOAT (BLACK CATIONIC EPOXY) [WATER BM-4 POLYMERS (PETROLEUM), VISCOUS LT-UNK C.I. PIGMENT BLACK 12 LT-UNK SOLVENT NAPHTHA (PETROLEUM), HYDRODESULFURIZED MEDIUM LT-UNK | MAM] STAINLESS STEEL 410 [IRON LT-P1 | END CHROMIUM LT-P1 | RES | END | SKI MANGANESE LT-P1 | END | MUL | REP SILICON LT-UNK NICKEL LT-1 | RES | CAN | SKI | MAM | MUL *PHOSPHORUS* BM-2 | MAM | PHY *SULFUR* LT-UNK | SKI]

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: N/A
LCA: Product Environmental Profile - PEP ecopassport Programme

CONSISTENCY WITH OTHER PROGRAMS

Pre-checked for LEED v4 Material Ingredients, Option 1

Third Party Verified?

- ○ Yes
- ◉ No

PREPARER: Self-Prepared
VERIFIER:
VERIFICATION #:

SCREENING DATE: 2018-04-11
PUBLISHED DATE: 2018-10-23
EXPIRY DATE: 2021-04-11

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 2.1, available on the HPDC website at: www.hpd-collaborative.org/hpd-2-1-standard

ALUMINUM 383

%: 61.0300 **HPD URL:**

PRODUCT THRESHOLD: 1000 ppm

RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Primary residuals are iron and silicon, which are leftover as impurities from bauxite refining and smelting processes and can range between 0-05% for Al 383.

OTHER MATERIAL NOTES: Low magnesium (0.10% max) alloys are used for die casting, typically for those applications requiring strength at elevated temperatures. The thermal expansion coefficient of the alloy decreases with increasing silicon and nickel content.

ALUMINUM

ID: 7429-90-5

%: 80.0000 - 85.0000 GS: LT-P1 RC: UNK NANO: No ROLE: Main ingredient

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H228 - Flammable solid
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H261 - In contact with water releases flammable gases
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Main ingredient

SILICON

ID: 7440-21-3

%: 9.5000 - 11.5000 GS: LT-UNK RC: UNK NANO: No ROLE: reduces melting temperature and improves fluidity

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Silicon reducing the melting temperature and improves fluidity.

ZINC

ID: 7440-66-6

%: 3.0000 - 3.0000 GS: LT-P1 RC: UNK NANO: No ROLE: increases strength and permits precipitation hardening

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ACUTE AQUATIC	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life
CHRON AQUATIC	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters

SUBSTANCE NOTES: Elemental zinc. Protective coating for metals to prevent corrosion; for electrical apparatus, especially dry cell batteries, household utensils, casting, printing plates, building materials, etc. [O'Neil, M.J. (ed.). The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. 13th Edition, Whitehouse Station, NJ: Merck and Co., Inc., 2001., p. 1810]

COPPER

ID: 7440-50-8

%: **2.0000 - 3.0000** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **reduce ductility and corrosion resistance**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Copper is one of the most important metals because of its durability, ductility, malleability, and electrical and thermal conductivity. It is used primarily as the metal or in alloys.

MANGANESE

ID: 7439-96-5

%: **0.5000 - 0.5000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Improves strain hardening**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1B

SUBSTANCE NOTES: Metallic manganese (ferromanganese) is used to improve hardness, stiffness, and strength. (EPA 1984; NAS 1973).

MAGNESIUM

ID: 7439-95-4

%: **0.1000 - 0.1000** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **increases strength and improves hardening ability**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air

PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously

SUBSTANCE NOTES: Increases strength and improves hardening ability

IRON

ID: 7439-89-6

%: **Impurity/Residual** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Iron is an impurity associated with the raw material, bauxite, used in the production of aluminum.

NICKEL

ID: 7440-02-0

%: **0.0000 - 0.3000** GS: **LT-1** RC: **UNK** NANO: **No** ROLE: **improve hardness and strength**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
CANCER	IARC	Group 1 - Agent is Carcinogenic to humans
CANCER	IARC	Group 2B - Possibly carcinogenic to humans
CANCER	CA EPA - Prop 65	Carcinogen
CANCER	US CDC - Occupational Carcinogens	Occupational Carcinogen
CANCER	US NIH - Report on Carcinogens	Known to be a human Carcinogen
CANCER	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
SKIN SENSITIZE	EU - GHS (H-Statements)	H317 - May cause an allergic skin reaction
CANCER	EU - GHS (H-Statements)	H351 - Suspected of causing cancer
ORGAN TOXICANT	EU - GHS (H-Statements)	H372 - Causes damage to organs through prolonged or repeated exposure
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
CANCER	MAK	Carcinogen Group 1 - Substances that cause cancer in man
RESPIRATORY	MAK	Sensitizing Substance Sah - Danger of airway & skin sensitization

SUBSTANCE NOTES: Nickel is primarily used in alloys because it imparts to a product such desirable properties as corrosion resistance, heat resistance, hardness, and strength. (ATSDR)

TIN

ID: 7440-31-5

%: **0.0000 - 0.1500** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **corrosion resistance**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Acts as anode for electron plating of zinc and improves corrosion-resistant coatings.

SHEET METAL BOX - STEEL

%: 27.5100 - 27.5100 **HPD URL:**

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Impurities resulting of steel making are nitrogen, silicon, phosphorus, sulfur and excess carbon.

OTHER MATERIAL NOTES: Stamped Steel G90U used in the 8-10 GANG STEEL MODULE ENDCAP (0.90% wt. whole) and the EFB45S SHEETMETAL BOX (26.60% wt. whole)

IRON

ID: **7439-89-6**

%: **95.0000 - 99.0000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Main ingredient**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Iron is the primary ingredient in steel production.

MANGANESE

ID: **7439-96-5**

%: **0.0500 - 2.0000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **improve tensile strength**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1B

SUBSTANCE NOTES: Metallic manganese (ferromanganese) is used principally in steel production to improve hardness, stiffness, and strength. It is used in carbon steel, stainless steel, high-temperature steel, and tool steel, along with cast iron and superalloys (EPA 1984; NAS 1973).

ALUMINUM

ID: **7429-90-5**

%: **0.0100 - 0.5000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **corrosion resistance**

HAZARDS:	AGENCY(IES) WITH WARNINGS:

RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H228 - Flammable solid
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H261 - In contact with water releases flammable gases
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Aluminum provides corrosion resistance to steel.

PHOSPHORUS

ID: 7723-14-0

%: **Impurity/Residual** GS: **BM-2** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H228 - Flammable solid
MAMMALIAN	US EPA - EPCRA Extremely Hazardous Substances	Extremely Hazardous Substances

SUBSTANCE NOTES: Phosphorous naturally sticks to iron and can remain as impurity in the steel.

COPPER

ID: 7440-50-8

%: **0.0050 - 0.4000** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **improve ductility**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Copper is one of the most important metals because of its durability, ductility, malleability, and electrical and thermal conductivity. It is used primarily as the metal or in alloys.

NICKEL

ID: 7440-02-0

%: **0.0040 - 0.5000** GS: **LT-1** RC: **UNK** NANO: **No** ROLE: **improve tensile strength**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
CANCER	IARC	Group 1 - Agent is Carcinogenic to humans
CANCER	IARC	Group 2B - Possibly carcinogenic to humans
CANCER	CA EPA - Prop 65	Carcinogen
CANCER	US CDC - Occupational Carcinogens	Occupational Carcinogen
CANCER	US NIH - Report on Carcinogens	Known to be a human Carcinogen
CANCER	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen

SKIN SENSITIZE	EU - GHS (H-Statements)	H317 - May cause an allergic skin reaction
CANCER	EU - GHS (H-Statements)	H351 - Suspected of causing cancer
ORGAN TOXICANT	EU - GHS (H-Statements)	H372 - Causes damage to organs through prolonged or repeated exposure
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
CANCER	MAK	Carcinogen Group 1 - Substances that cause cancer in man
RESPIRATORY	MAK	Sensitizing Substance Sah - Danger of airway & skin sensitization

SUBSTANCE NOTES: Nickel is primarily used in alloys because it imparts to a product such desirable properties as corrosion resistance, heat resistance, hardness, and strength. (ATSDR)

TIN

ID: 7440-31-5

%: **Impurity/Residual** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Acts as anode for electron plating and improves corrosion-resistance.

TITANIUM

ID: 7440-32-6

%: **0.0020 - 0.1500** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **corrosion resistance**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Adds high resistance to corrosion and durability over time.

SILICON

ID: 7440-21-3

%: **0.0010 - 1.0500** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **deoxidizer**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Silicon combined with manganese is essential as a deoxidizer and a desulfurizing agent for steel.

BORON

ID: 7440-42-8

%: **Impurity/Residual** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Highest concern GreenScreen score : LT-UNK (Benchmark Unknown)

VANADIUM

ID: 7440-62-2

%: **0.0010 - 0.1500** GS: **LT-1** RC: **UNK** NANO: **No** ROLE: **alloying element**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 3 - Severe Hazard to Waters
CANCER	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
GENE MUTATION	MAK	Germ Cell Mutagen 2

SUBSTANCE NOTES: Vanadium increases hardenability and improves wear resistance in steel.

CARBON

ID: 7440-44-0

%: **0.0010 - 0.6000** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **Hardener**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Increasing carbon content in steel increases hardness and strength and improves hardenability.

CALCIUM

ID: 7440-70-2

%: **Impurity/Residual** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H261 - In contact with water releases flammable gases

SUBSTANCE NOTES: Highest concern GreenScreen score : LT-P1 (Possible Benchmark 1)

CHROMIUM

ID: 7440-47-3

%: **0.0000 - 0.7000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **increases hardness and melting temperature**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SKIN SENSITIZE	MAK	Sensitizing Substance Sh - Danger of skin sensitization

SUBSTANCE NOTES: In the metallurgical industry, chromium is used to produce stainless steels, alloy cast irons, nonferrous alloys, and other miscellaneous materials. Used in preparation of alloy steels to enhance corrosion and heat resistance.

ZINC

ID: 7440-66-6

%: 0.0000 - 0.9000 GS: LT-P1 RC: UNK NANO: No ROLE: Coating

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ACUTE AQUATIC	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life
CHRON AQUATIC	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters

SUBSTANCE NOTES: Elemental zinc. Protective coating for metals to prevent corrosion; for electrical apparatus, especially dry cell batteries, household utensils, casting, printing plates, building materials, etc. [O'Neil, M.J. (ed.). The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. 13th Edition, Whitehouse Station, NJ: Merck and Co., Inc., 2001., p. 1810]

SULFUR

ID: 7704-34-9

%: Impurity/Residual GS: LT-UNK RC: UNK NANO: No ROLE: Impurity/Residual

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
SKIN IRRITATION	EU - GHS (H-Statements)	H315 - Causes skin irritation

SUBSTANCE NOTES: Steel with low manganese sulfide ratio may contain sulfur in the form of iron sulfide (FeS), which can cause cracking in the weld. Although it increases the tensile strength of steel and improves machinability it is generally regarded as an undesirable impurity because of its embrittling effect.

ZINC CASTING - ZAMAC 3

%: 6.8200 - 6.8200 HPD URL:

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: The roasted zinc oxide is leached with sulfuric acid, and the solution is electrolyzed to produce zinc of >99.9% purity. Traces of sulfuric acid (<0.1) can remain as residuals of the leach process.

OTHER MATERIAL NOTES: Considered to be the standard material for zinc die casting. It has good physical/mechanical properties, castability, and long-term stability in addition to being suitable for plating, painting, and chromate finishes. https://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=302&tid=54

ZINC

ID: 7440-66-6

%: **95.0000 - 96.0000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Base ingredient**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ACUTE AQUATIC	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life
CHRON AQUATIC	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters

SUBSTANCE NOTES: Elemental zinc. Protective coating for metals to prevent corrosion; for electrical apparatus, especially dry cell batteries, household utensils, casting, printing plates, building materials, etc. [O'Neil, M.J. (ed.). The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. 13th Edition, Whitehouse Station, NJ: Merck and Co., Inc., 2001., p. 1810]

ALUMINUM

ID: 7429-90-5

%: **3.5000 - 4.3000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **corrosion resistance**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H228 - Flammable solid
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H261 - In contact with water releases flammable gases
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Aluminum provides corrosion resistance.

COPPER

ID: 7440-50-8

%: **0.1000 - 0.2500** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **corrosion resistance**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
None Found	No warnings found on HPD Priority lists	

SUBSTANCE NOTES: Copper is one of the most important metals because of its durability, ductility, malleability, and electrical and thermal conductivity. It is used primarily as the metal or in alloys.

IRON

ID: 7439-89-6

%: **Impurity/Residual** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Nearly all zinc is obtained from sulfide ores, which also usually contain other metals such as iron. The most commonly occurring ores are sphalerite, also known as zinc blende (ZnS), and another variety of sphalerite called marmatite which contains significant quantities of iron sulfides.

MAGNESIUM

ID: **7439-95-4**

%: **0.0200 - 0.0500** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **hardener**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously

SUBSTANCE NOTES: Increases hardness

LEAD

ID: **7439-92-1**

%: **Impurity/Residual** GS: **LT-1** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
DEVELOPMENTAL	G&L - Neurotoxic Chemicals	Developmental Neurotoxicant
CANCER	US EPA - IRIS Carcinogens	(1986) Group B2 - Probable human Carcinogen
CANCER	IARC	Group 2A - Agent is probably Carcinogenic to humans
CANCER	IARC	Group 2B - Possibly carcinogenic to humans
CANCER	CA EPA - Prop 65	Carcinogen
DEVELOPMENTAL	CA EPA - Prop 65	Developmental toxicity
PBT	US EPA - Priority PBTs (NWMP)	Priority PBT
PBT	WA DoE - PBT	PBT
REPRODUCTIVE	CA EPA - Prop 65	Reproductive Toxicity - Female
REPRODUCTIVE	CA EPA - Prop 65	Reproductive Toxicity - Male
CANCER	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
PBT	US EPA - Toxics Release Inventory PBTs	PBT
REPRODUCTIVE	EU - SVHC Authorisation List	Toxic to reproduction - Candidate list
PBT	OSPAR - Priority PBTs & EDs & equivalent concern	PBT - Chemical for Priority Action

PBT	OR DEQ - Priority Persistent Pollutants	Priority Persistent Pollutant - Tier 1
DEVELOPMENTAL	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Developmental Toxicity
REPRODUCTIVE	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Reproductive Toxicity
REPRODUCTIVE	EU - GHS (H-Statements)	H360FD - May damage fertility. May damage the unborn child
DEVELOPMENTAL	EU - GHS (H-Statements)	H362 - May cause harm to breast-fed children
REPRODUCTIVE	EU - REACH Annex XVII CMRs	Toxic to Reproduction Category 1 - Substances known to impair fertility or cause Developmental Toxicity in humans
MULTIPLE	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
CANCER	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
CANCER	Korea - GHS	Carcinogenicity - Category 1 [H350 - May cause cancer]
REPRODUCTIVE	Korea - GHS	Reproductive toxicity - Category 1 [H360 - May damage fertility or the unborn child]
REPRODUCTIVE	New Zealand - GHS	6.8A - Known or presumed human reproductive or developmental toxicants
REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1A
GENE MUTATION	MAK	Germ Cell Mutagen 3a
REPRODUCTIVE	EU - Annex VI CMRs	Reproductive Toxicity - Category 1A
DEVELOPMENTAL	Australia - GHS	H360Df - May damage the unborn child. Suspected of damaging fertility

SUBSTANCE NOTES: The zinc ore is mined, crushed, ball-milled and then concentrated by froth flotation. This removes unwanted components, including the lead compounds and waste rock.

CADMIUM

ID: **7440-43-9**

%: **0.0030 - 0.0040** GS: **LT-1** RC: **UNK** NANO: **No** ROLE: **Coating**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
CANCER	US EPA - IRIS Carcinogens	(1986) Group B1 - Probable human Carcinogen
CANCER	IARC	Group 1 - Agent is Carcinogenic to humans
CANCER	CA EPA - Prop 65	Carcinogen
DEVELOPMENTAL	CA EPA - Prop 65	Developmental toxicity
PBT	US EPA - Priority PBTs (NWMP)	Priority PBT
REPRODUCTIVE	CA EPA - Prop 65	Reproductive Toxicity - Male
CANCER	US CDC - Occupational Carcinogens	Occupational Carcinogen
CANCER	US NIH - Report on Carcinogens	Known to be a human Carcinogen

CANCER	EU - SVHC Authorisation List	Carcinogenic - Candidate list
PBT	OSPAR - Priority PBTs & EDs & equivalent concern	PBT - Chemical for Priority Action
PBT	OR DEQ - Priority Persistent Pollutants	Priority Persistent Pollutant - Tier 1
ACUTE AQUATIC	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life
CHRON AQUATIC	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
MAMMALIAN	EU - GHS (H-Statements)	H330 - Fatal if inhaled
GENE MUTATION	EU - GHS (H-Statements)	H341 - Suspected of causing genetic defects
CANCER	EU - GHS (H-Statements)	H350 - May cause cancer
REPRODUCTIVE	EU - GHS (H-Statements)	H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child
ORGAN TOXICANT	EU - GHS (H-Statements)	H372 - Causes damage to organs through prolonged or repeated exposure
CANCER	EU - REACH Annex XVII CMRs	Carcinogen Category 2 - Substances which should be regarded as if they are Carcinogenic to man
MULTIPLE	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 3 - Severe Hazard to Waters
CANCER	MAK	Carcinogen Group 1 - Substances that cause cancer in man
CANCER	Korea - GHS	Carcinogenicity - Category 1 [H350 - May cause cancer]
CANCER	EU - Annex VI CMRs	Carcinogen Category 1B - Presumed Carcinogen based on animal evidence
GENE MUTATION	New Zealand - GHS	6.6A - Known or presumed human mutagens
CANCER	New Zealand - GHS	6.7A - Known or presumed human carcinogens
REPRODUCTIVE	New Zealand - GHS	6.8A - Known or presumed human reproductive or developmental toxicants
CANCER	Japan - GHS	Carcinogenicity - Category 1A
GENE MUTATION	MAK	Germ Cell Mutagen 3a
CANCER	Malaysia - GHS	H350 - May cause cancer
CANCER	Australia - GHS	H350 - May cause cancer

SUBSTANCE NOTES: Cadmium is used as engineering coatings on steel.

TIN ID: **7440-31-5**

%: **0.0020 - 0.0030** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **corrosion resistance**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Acts as an anode for electron plating of zinc and improves corrosion-resistant coatings.

LEXAN 940

%: 1.4900 - 1.4900 **HPD URL:**

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Polycarbonate residuals include Bisphenol A (0.01% Wt. whole) and antimony trioxide (unknown %).

OTHER MATERIAL NOTES: Lexan is the commercial name for a type of Polycarbonate. The substances declared in this HPD are for a representative Polycarbonate (PC). There will be variation of the exact Polycarbonate componentsbetween manufacturers. There is very little disclosure as to the specific additives used in PC. Other additives such as fillers, antistatic agents, flame retardants, etc, are sometimes used in polycarbonate. Except for Polycarbonate, all other ingredients are reported at 100 ppm.

POLYCARBONATE (POLYCARBONATE)

ID: 25037-45-0

%: 99.7400 GS: LT-UNK RC: UNK NANO: No ROLE: Main ingredient

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Main ingredient

2-(2H-BENZOTRIAZOL-2-YL)-4-(TERT-BUTYL)-6-(SEC-BUTYL)PHENOL (2-(2H-BENZOTRIAZOL-2-YL)-4-(TERT-BUTYL)-6-(SEC-BUTYL)PHENOL)

ID: 36437-37-3

%: 0.1800 GS: LT-1 RC: UNK NANO: No ROLE: UV stabilizer

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PBT	EU - SVHC Authorisation List	vPvB - Candidate list
PBT	EU - SVHC Authorisation List	vPvB - Prioritized for listing
PBT	ChemSec - SIN List	PBT / vPvB (Persistent, Bioaccumulative, & Toxic / very Persistent & very Bioaccumulative)
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters

SUBSTANCE NOTES: Product trade name: UV-350; UV-stabilizer for plastics

STEARIC ACID, TETRAESTER WITH PENTAERYTHRITOL (STEARIC ACID, TETRAESTER WITH PENTAERYTHRITOL)

ID: 115-83-3

%: 0.0500 GS: NoGS RC: NANO: ROLE: mold release

UNK No agent

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Mold release agent added to polycarbonate

TRIS(2,4-DI-TERT-BUTYLPHENYL) PHOSPHITE (TRIS(2,4-DI-TERT-BUTYLPHENYL) PHOSPHITE)

ID: 31570-04-4

%: 0.0300 GS: LT-UNK RC: UNK NANO: No ROLE: heat stabilizer

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PBT	EU - ESIS PBT	Under PBT evaluation

SUBSTANCE NOTES: Stabilizer, antioxidant used in polymers. Trivalent phosphorous compound. Synonyms: Ethaphos 368; IRGAFOS 168 RGAFOS 168 is a trisarylphosphite processing stabiliser. It is a highly effective, low volatile and hydrolysis resistant antioxidant for coating resins. It protects the resin polymer against oxidation during resin synthesis, manufacturing of the paint, processing (thermal curing and overbaking) and the designed life-time of the final coating. IRGAFOS 168 provides excellent protection against discolouration and change of physical properties caused by excessive heat exposure." (BASF)

MOLDED SILICON (LIQUID) AG LR3003

%: 0.8100 - 0.8100 **HPD URL:**

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Acetic acid, methyltriacetoxilane residual Polycyclic aromatic hydrocarbons, carbon black residual Decamethylcyclopentasiloxane, polydimethyl siloxane residual http://www.quartzproject.org/p/CP051-a01/q/siloxane#cp

OTHER MATERIAL NOTES: Proprietary ingredients were not available for disclosure. Silicone sealants are used as a secondary seal in dual seal insulated products. The data in this HPD is from a representative siloxane material.

SILOXANES AND SILICONES, DI-ME, HYDROXY-TERMINATED

ID: 70131-67-8

%: 75.9800 GS: BM-2 RC: UNK NANO: No ROLE: Polymer

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: UVCB-organic

SILICA, AMORPHOUS

ID: 7631-86-9

%: 11.6900 GS: LT-P1 RC: UNK NANO: No ROLE: filler

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
CANCER	Japan - GHS	Carcinogenicity - Category 1A

CANCER	Australia - GHS	H350i - May cause cancer by inhalation

SUBSTANCE NOTES: Synonyms: Diatomaceous earth; Diatomaceous silica; Silica Dioxide; Silica gel; Siliceous earth; Silicon dioxide.

POLYDIMETHYLSILOXANES

ID: 63148-62-9

%: **5.8400** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **anti-foaming**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PBT	EC - CEPA DSL	Persistent, Bioaccumulative and inherently Toxic (PBiTH) to humans

SUBSTANCE NOTES: Ingredient of spray lubricants, automobile polishes, building material adhesives, sealants, and cleaners, cosmetics. (Houshold Products Database)

METHYLSILANETRIOL TRIACETATE

ID: 4253-34-3

%: **3.5100** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **crosslinker**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: The commercial use of this material is almost exclusively as a cross linker.

OCTAMETHYLCYCLOTETRASILOXANE (D4)

ID: 556-67-2

%: **1.1700** GS: **BM-1** RC: **UNK** NANO: **No** ROLE: **intermediate**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	EU - Priority Endocrine Disruptors	Category 1 - In vivo evidence of Endocrine Disruption Activity
PBT	EU - ESIS PBT	Under PBT evaluation
PBT	EU - SVHC Authorisation List	PBT - Candidate list
PBT	EU - SVHC Authorisation List	vPvB - Candidate list
PBT	OR DEQ - Priority Persistent Pollutants	Priority Persistent Pollutant - Tier 1
PBT	EC - CEPA DSL	Persistent, Bioaccumulative and inherently Toxic (PBiTE) to the Environment (based on aquatic organisms)
PBT	EC - CEPA DSL	Persistent, Bioaccumulative and inherently Toxic (PBiTH) to humans
RESTRICTED LIST	US EPA - PPT Chemical Action Plans	TSCA Work Plan chemical - Action Plan in development
REPRODUCTIVE	EU - GHS (H-Statements)	H361f - Suspected of damaging fertility
MULTIPLE	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant

ENDOCRINE	ChemSec - SIN List	Endocrine Disruption
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 3 - Severe Hazard to Waters
RESTRICTED LIST	US EPA - PPT Chemical Action Plans	TSCA Work Plan chemical - ongoing chemical (risk) assessment

SUBSTANCE NOTES: D4 is an intermediate

CARBON BLACK

ID: 1333-86-4

%: **1.1700** GS: **LT-1** RC: **UNK** NANO: **No** ROLE: **pigment**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
CANCER	US CDC - Occupational Carcinogens	Occupational Carcinogen
CANCER	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route
CANCER	IARC	Group 2B - Possibly carcinogenic to humans - inhaled from occupational sources
CANCER	MAK	Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification

SUBSTANCE NOTES: Synonyms: Acetylene black; Carbon, amorphous; Channel black; CI 77266; Furnace black; Lamp black; Pigment black 6; Pigment black 7; Thermal black

DIBUTYLTIN DILAURATE

ID: 77-58-7

%: **0.6400** GS: **LT-1** RC: **UNK** NANO: **No** ROLE: **curing agent**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PBT	OSPAR - Priority PBTs & EDs & equivalent concern	PBT - Chemical for Priority Action
GENE MUTATION	EU - GHS (H-Statements)	H341 - Suspected of causing genetic defects
REPRODUCTIVE	EU - GHS (H-Statements)	H360FD - May damage fertility. May damage the unborn child
ORGAN TOXICANT	EU - GHS (H-Statements)	H372 - Causes damage to organs through prolonged or repeated exposure
MULTIPLE	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant
ENDOCRINE	ChemSec - SIN List	Endocrine Disruption
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 3 - Severe Hazard to Waters
CANCER	MAK	Carcinogen Group 4 - Non-genotoxic carcinogen with low risk under MAK/BAT levels
DEVELOPMENTAL	MAK	Pregnancy Risk Group B

REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1B
REPRODUCTIVE	EU - Annex VI CMRs	Reproductive Toxicity - Category 1B
REPRODUCTIVE	Australia - GHS	H360Fd - May damage fertility. Suspected of damaging the unborn child

SUBSTANCE NOTES: Synonyms: dibutyltindilaurate; Stannane, dibutylbis(lauroyloxy) Catalyst for the curing of room-temperature-vulcanized (RTV) silicone elastomers to produce flexible silicone rubbers used as sealing compounds, insulators, and in a wide variety of other applications.

GEON M3900

%: 0.5700 - 0.5700 **HPD URL:**

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Specifications for a typical commercial PVC call for maxima in mg/kg by weight of the following impurities: unsaturated hydrocarbons - 10; acetaldehyde - 2; dichloro compounds - 16; water - 15 ; hydrogen chloride - 2; nonvolatiles - 200; iron - 0.4. Phenol at levels of 25-50 mg/kg by weight is used as a stabilizer to prevent polymerization.

OTHER MATERIAL NOTES: Due to the proprietary nature of this substance, rigid PVC was used as a representative material.

POLYVINYL CHLORIDE (PVC)

ID: 9002-86-2

%: **98.0000 - 98.0000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Base ingredient**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced

SUBSTANCE NOTES: Main ingredient

TIN

ID: 7440-31-5

%: **2.0000 - 2.0000** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **Stabilizer**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Synonyms: Tin flake; Tin powder Acta as an anode for electron plating and improves corrosion-resistance. [Lewis, R.J., Sr (Ed.). Hawley's Condensed Chemical Dictionary. 13th ed. New York, NY: John Wiley & Sons, Inc. 1997., p. 1107]

UNDISCLOSED

%: 0.5600 **HPD URL:**

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Unknown as per manufacturer formula and SDS.

OTHER MATERIAL NOTES: This data set represents the powder coat finishes.

POLYESTER (POLYESTER)

ID: 113669-95-7

%: 51.5000 GS: NoGS RC: UNK NANO: No ROLE: Base resin

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
None Found	No warnings found on HPD Priority lists	

SUBSTANCE NOTES: This substance represents the Polyester resin identified in the manufacturer formula. Though it is listed as proprietary, it is specified as Polyester resin.

ALUMINA TRIHYDRATE

ID: 21645-51-2

%: 17.4000 GS: BM-2 RC: UNK NANO: No ROLE: filler

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced

SUBSTANCE NOTES: Aluminum trihydroxide is an additive mineral flame retardant, filler, and an additive for fume reduction (Leisewitz 2001). Because it is a relatively weak-acting flame retardant, it must be utilized in large quantities, which limits its application area. (Lewis 1997)." (Green Screen)

2-PROPENOIC ACID, POLYMER WITH BUTYL 2-PROPENOATE

ID: 25119-83-9

%: 8.9000 GS: LT-UNK RC: UNK NANO: No ROLE: flow-control additive

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
None Found	No warnings found on HPD Priority lists	

SUBSTANCE NOTES: This is one of the possible additives added to powder coats. There are more that make up a trade secret additive set but it is unknown. This declaration only discloses this chemical to try to identify some of the hazards associated to the additive portion of the powder coat.

BARIUM SULFATE (BARIUM SULFATE)

ID: 7727-43-7

%: 6.6000 GS: BM-2 RC: UNK NANO: No ROLE: color modifier

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
CANCER	MAK	Carcinogen Group 4 - Non-genotoxic carcinogen with low risk under MAK/BAT levels

SUBSTANCE NOTES: Color modifier

TITANIUM DIOXIDE

ID: 13463-67-7

%: 6.0000 GS: LT-1 RC: UNK NANO: No ROLE: pigment

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
CANCER	US CDC - Occupational Carcinogens	Occupational Carcinogen
CANCER	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route
CANCER	IARC	Group 2B - Possibly carcinogenic to humans - inhaled from occupational sources
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
CANCER	MAK	Carcinogen Group 3A - Evidence of carcinogenic effects but not sufficient to establish MAK/BAT value
CANCER	MAK	Carcinogen Group 4 - Non-genotoxic carcinogen with low risk under MAK/BAT levels

SUBSTANCE NOTES: Titanium dioxide, also known as titanium(IV) oxide or titania, is the naturally occurring oxide of titanium, chemical formula TiO2. When used as a pigment, it is called titanium white, Pigment White 6 (PW6), or CI 77891.

TRIGLYCIDYL ISOCYANURATE (TGIC) (TRIGLYCIDYL ISOCYANURATE (TGIC))

ID: **2451-62-9**

%: **5.0000** GS: **LT-1** RC: **UNK** NANO: **No** ROLE: **curing agent**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
GENE MUTATION	EU - SVHC Authorisation List	Mutagenic - Candidate list
MAMMALIAN	EU - GHS (H-Statements)	H301 - Toxic if swallowed
SKIN SENSITIZE	EU - GHS (H-Statements)	H317 - May cause an allergic skin reaction
EYE IRRITATION	EU - GHS (H-Statements)	H318 - Causes serious eye damage
MAMMALIAN	EU - GHS (H-Statements)	H331 - Toxic if inhaled
GENE MUTATION	EU - GHS (H-Statements)	H340 - May cause genetic defects
GENE MUTATION	EU - REACH Annex XVII CMRs	Mutagen Category 2 - Substances which should be regarded as if they are Mutagenic to man
MULTIPLE	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 3 - Severe Hazard to Waters
RESPIRATORY	MAK	Sensitizing Substance Sah - Danger of airway & skin sensitization
GENE MUTATION	Korea - GHS	Germ cell mutagenicity - Category 1 [H340 - May cause genetic defects]
GENE MUTATION	EU - Annex VI CMRs	Mutagen - Category 1B
GENE MUTATION	New Zealand - GHS	6.6A - Known or presumed human mutagens
GENE MUTATION	Japan - GHS	Germ cell mutagenicity - Category 1B

SUBSTANCE NOTES: TGIC is widely used as a cross-linking agent or curing agent in powder coating industry, It is used also in the printed

circuit board industry, electrical insulation and as a stabilizer in plastic industry.

IRON OXIDE (IRON OXIDE)

ID: 1317-61-9

%: 3.7000 GS: LT-UNK RC: UNK NANO: No ROLE: filler

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
CANCER	MAK	Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification

SUBSTANCE NOTES: Iron oxides (oxides of iron, CAS Reg. No. 1332-37-2) are undefined mixtures of iron (II) oxide (CAS Reg. No. 1345-25-1, black cubic crystals) and iron (III) oxide (CAS Reg. No. 1309-37-1, red-brown to black trigonal crystals).

CARBON BLACK

ID: 1333-86-4

%: 0.9000 GS: LT-1 RC: UNK NANO: No ROLE: filler

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
CANCER	US CDC - Occupational Carcinogens	Occupational Carcinogen
CANCER	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route
CANCER	IARC	Group 2B - Possibly carcinogenic to humans - inhaled from occupational sources
CANCER	MAK	Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification

SUBSTANCE NOTES: Synonyms: Acetylene black; Carbon, amorphous; Channel black; CI 77266; Furnace black; Lamp black; Pigment black 6; Pigment black 7; Thermal black.

LOW CARBON ALLOY STEEL

%: 0.4900 HPD URL:

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: No known hazardous impurities according to the Quartz database.

OTHER MATERIAL NOTES: Steel Hex Cap Screws, Bolts and Studs for General Use. Based on previous research that galvanized and related coatings are typically specified only where corrosion is expected, this evaluation assumes a plain, unfinished assembly of bolt, washer and nut. This data set is for the parts indicated below: SCREW #6-32X1/4 FHMS ZINC (0.07%) NUT: HEX: #8-32 (0.42%) The chemicals listed represent the typical composition of a bolt. The bolt contains more substance than a nut, reason to choose a bolt as representative of the low carbon steel alloy fastener. Except for manganese, silicon and copper alloys, a nut and a bolt share the following elements -iron, carbon, sulfur, phosphorous. The total % of chemicals is 100.5% because the Zinc plating % is reported to the max. That % can vary per manufacturer. Alloying elements are reported at 100ppm.

IRON

ID: 7439-89-6

%: 96.6000 - 96.6500 GS: LT-P1 RC: UNK NANO: No ROLE: Base ingredient

HAZARDS:	AGENCY(IES) WITH WARNINGS:	

ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Iron is the primary ingredient in steel production.

MANGANESE

ID: 7439-96-5

%: 1.6000 - 1.6500 GS: LT-P1 RC: UNK NANO: No ROLE: alloying element

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1B

SUBSTANCE NOTES: Metallic manganese (ferromanganese) is used principally in steel production to improve hardness, stiffness, and strength. It is used in carbon steel, stainless steel, high-temperature steel, and tool steel, along with cast iron and superalloys (EPA 1984; NAS 1973).

ZINC

ID: 7440-66-6

%: 0.0500 - 0.0500 GS: LT-P1 RC: UNK NANO: No ROLE: Plating material

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ACUTE AQUATIC	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life
CHRON AQUATIC	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters

SUBSTANCE NOTES: Zinc plating, retards the corrosion rate in a normal atmosphere.

SILICON

ID: 7440-21-3

%: 0.0000 - 0.6000 GS: LT-UNK RC: UNK NANO: No ROLE: alloying element

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Silicon combined with manganese is essential as a deoxidizer and a desulfurizing agent for steel.

COPPER

ID: 7440-50-8

%: 0.0000 - 0.6000 | GS: LT-UNK | RC: UNK | NANO: No | ROLE: alloying element

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Copper is one of the most important metals because of its durability, ductility, malleability, and electrical and thermal conductivity. It is used primarily as the metal or in alloys.

CARBON

ID: 7440-44-0

%: 0.0000 - 0.4100 | GS: LT-UNK | RC: UNK | NANO: No | ROLE: alloying element

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Increasing carbon content in steel increases hardness and strength and improves hardenability.

SULFUR

ID: 7704-34-9

%: 0.0000 - 0.0500 | GS: LT-UNK | RC: UNK | NANO: No | ROLE: alloying element

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
SKIN IRRITATION	EU - GHS (H-Statements)	H315 - Causes skin irritation

SUBSTANCE NOTES: Steel with low manganese sulfide ratio may contain sulfur in the form of iron Sulfide (FeS), which can cause cracking in the weld. Although it increases the tensile strength of steel and improves machinability it is generally regarded as an undesirable impurity because of its embrittling effect.

PHOSPHORUS

ID: 7723-14-0

%: 0.0000 - 0.0400 | GS: BM-2 | RC: UNK | NANO: No | ROLE: alloying element

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H228 - Flammable solid
MAMMALIAN	US EPA - EPCRA Extremely Hazardous Substances	Extremely Hazardous Substances

SUBSTANCE NOTES: Phosphorous improves machining characteristics and atmospheric corrosion resistance.

ALUMINUM 6061-T6

%: 0.2600

HPD URL:

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Primary residuals are iron and silicon, which are leftover as impurities from bauxite refining and smelting processes and can range between 0-0.15% for Al 6061-T6.

OTHER MATERIAL NOTES: One of the most common and broadly used Aluminum alloys, Al 6061 has good weldability, machinability, toughness, strength, surface finish and resistance to corrosion.

6061 ALUMINUM

ID: 7429-90-5

%: 95.8000 - 98.6000 GS: LT-P1 RC: UNK NANO: No ROLE: Main ingredient

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H228 - Flammable solid
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H261 - In contact with water releases flammable gases
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Main ingredient

MAGNESIUM

ID: 7439-95-4

%: 0.8000 - 1.2000 GS: LT-UNK RC: UNK NANO: No ROLE: Increases strength and improves hardness

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously

SUBSTANCE NOTES: Increases strength

SILICON

ID: 7440-21-3

%: 0.4000 - 0.8000 GS: LT-UNK RC: UNK NANO: No ROLE: Reduces melting temperature and improves fluidity

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Reduces melting temperature and improves fluidity

COPPER

ID: 7440-50-8

%: 0.1500 - 0.4000 GS: LT-UNK RC: UNK NANO: No ROLE: Reduce ductility and corrosion resistance

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Copper is one of the most important metals because of its durability, ductility, malleability, and electrical and thermal conductivity. It is used primarily as the metal or in alloys.

CHROMIUM

ID: 7440-47-3

%: **0.0400 - 0.3500** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Increases hardness and melting temperature**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
SKIN SENSITIZE	MAK	Sensitizing Substance Sh - Danger of skin sensitization

SUBSTANCE NOTES: In the metallurgical industry, chromium is used to produce stainless steels, alloy cast irons, nonferrous alloys, and other miscellaneous materials. Use in preparation of alloy steels to enhance corrosion and heat resistance.

IRON

ID: 7439-89-6

%: **Impurity/Residual** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Iron is an impurity associated with the raw material, bauxite, used in the production of aluminum.

MANGANESE

ID: 7439-96-5

%: **0.0000 - 0.1500** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Improves strain hardening**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1B

SUBSTANCE NOTES: Metallic manganese (ferromanganese) is used principally in steel production to improve hardness, stiffness, and strength. It is used in carbon steel, stainless steel, high-temperature steel, and tool steel, along with cast iron and superalloys (EPA 1984; NAS 1973).

TITANIUM

ID: 7440-32-6

%: 0.0000 - 0.1500 GS: LT-UNK RC: UNK NANO: No ROLE: Corrosion resistance

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Adds high resistance to corrosion and durability over time.

ZINC

ID: 7440-66-6

%: 0.0000 - 0.2500 GS: LT-P1 RC: UNK NANO: No ROLE: Increases strength and permits precipitation hardening

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ACUTE AQUATIC	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life
CHRON AQUATIC	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters

SUBSTANCE NOTES: Nearly all zinc is obtained from sulfide ores, which also usually contain other metals such as iron. The most commonly occurring ores are sphalerite, also known as zinc blende (ZnS), and another variety of sphalerite called marmatite which contains significant quantities of iron sulfides.

LOW CARBON STEEL WIRE

%: 0.1900 HPD URL:

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Sulfur and phosphorous are added for machining performance. Traces of these two elements remain as impurities in the carbon steel.

OTHER MATERIAL NOTES: AISI 1018 Mild/Low Carbon Steel

IRON

ID: 7439-89-6

%: 98.8100 - 99.2600 GS: LT-P1 RC: UNK NANO: No ROLE: Main ingredient

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: This is the main substance of the wire. The high iron strengthens the wire.

MANGANESE

ID: 7439-96-5

%: **0.6000 - 0.9000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **improve tensile strength**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1B

SUBSTANCE NOTES: Manganese increases hardenability and tensile strength of steel, but to a lesser extent than carbon.

CARBON

ID: **7440-44-0**

%: **0.1400 - 0.2000** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **toughness/hardener**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: 0.2% is the max amount of carbon to preserve the flexibility of the carbon steel wire.

PHOSPHORUS

ID: **7723-14-0**

%: **Impurity/Residual** GS: **BM-2** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H228 - Flammable solid
MAMMALIAN	US EPA - EPCRA Extremely Hazardous Substances	Extremely Hazardous Substances

SUBSTANCE NOTES: Phosphorous improves machining characteristics and atmospheric corrosion resistance.

SULFUR

ID: **7704-34-9**

%: **Impurity/Residual** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
SKIN IRRITATION	EU - GHS (H-Statements)	H315 - Causes skin irritation

SUBSTANCE NOTES: S is an element which is always present in steel in small quantities. S in steel is introduced through iron ore and fuel (coal and coke). The removal of S during steel making is a tedious and difficult process. S is normally regarded as an impurity in steel and is required to be reduced to the limits of practicality. (refer http://ispatguru.com/free-cutting-steels/)

BRASS

%: 0.1200 - 0.1200 HPD URL:

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Residuals and impurities were considered based on publicly available information.

OTHER MATERIAL NOTES: This material is a combination of copper and zinc plus additional alloying elements, iron and lead.

COPPER

ID: 7440-50-8

%: 83.8800 - 85.8800 GS: LT-UNK RC: UNK NANO: No ROLE: Base ingredient

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: The high content of copper makes brass a ductile material.

ZINC

ID: 7440-66-6

%: 14.0000 - 16.0000 GS: LT-P1 RC: UNK NANO: No ROLE: hardness

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ACUTE AQUATIC	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life
CHRON AQUATIC	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters

SUBSTANCE NOTES: The zinc is provided as a range because the exact brass alloy has not been identified.

LEAD

ID: 7439-92-1

%: 0.0700 GS: LT-1 RC: UNK NANO: No ROLE: corrosion resistance

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
DEVELOPMENTAL	G&L - Neurotoxic Chemicals	Developmental Neurotoxicant
CANCER	US EPA - IRIS Carcinogens	(1986) Group B2 - Probable human Carcinogen
CANCER	IARC	Group 2A - Agent is probably Carcinogenic to humans
CANCER	IARC	Group 2B - Possibly carcinogenic to humans
CANCER	CA EPA - Prop 65	Carcinogen
DEVELOPMENTAL	CA EPA - Prop 65	Developmental toxicity

PBT	US EPA - Priority PBTs (NWMP)	Priority PBT
PBT	WA DoE - PBT	PBT
REPRODUCTIVE	CA EPA - Prop 65	Reproductive Toxicity - Female
REPRODUCTIVE	CA EPA - Prop 65	Reproductive Toxicity - Male
CANCER	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
PBT	US EPA - Toxics Release Inventory PBTs	PBT
REPRODUCTIVE	EU - SVHC Authorisation List	Toxic to reproduction - Candidate list
PBT	OSPAR - Priority PBTs & EDs & equivalent concern	PBT - Chemical for Priority Action
PBT	OR DEQ - Priority Persistent Pollutants	Priority Persistent Pollutant - Tier 1
DEVELOPMENTAL	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Developmental Toxicity
REPRODUCTIVE	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Reproductive Toxicity
REPRODUCTIVE	EU - GHS (H-Statements)	H360FD - May damage fertility. May damage the unborn child
DEVELOPMENTAL	EU - GHS (H-Statements)	H362 - May cause harm to breast-fed children
REPRODUCTIVE	EU - REACH Annex XVII CMRs	Toxic to Reproduction Category 1 - Substances known to impair fertility or cause Developmental Toxicity in humans
MULTIPLE	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
CANCER	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
CANCER	Korea - GHS	Carcinogenicity - Category 1 [H350 - May cause cancer]
REPRODUCTIVE	Korea - GHS	Reproductive toxicity - Category 1 [H360 - May damage fertility or the unborn child]
REPRODUCTIVE	New Zealand - GHS	6.8A - Known or presumed human reproductive or developmental toxicants
REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1A
GENE MUTATION	MAK	Germ Cell Mutagen 3a
REPRODUCTIVE	EU - Annex VI CMRs	Reproductive Toxicity - Category 1A
DEVELOPMENTAL	Australia - GHS	H360Df - May damage the unborn child. Suspected of damaging fertility

SUBSTANCE NOTES: Lead is a very corrosion-resistant, dense, ductile, and malleable blue-gray metal.

IRON

ID: 7439-89-6

%: **0.0500** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **tenacity**

HAZARDS: AGENCY(IES) WITH WARNINGS:

ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Used in manufacturing of alloys with carbon.

HT800 CELLULAR SILICONE W 3M- FOAM/RIGID

%: 0.0500 - 0.0500 **HPD URL:**

PRODUCT THRESHOLD: 1000 ppm

RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Unknown as per manufacturer SDS.

OTHER MATERIAL NOTES: This material is a silicone elastomer made from gum based polydimethylsiloxane (PMDS). Due to the proprietary nature of this material, representative substances were chosen based on publicly available data.

POLYDIMETHYL SILOXANE

ID: 9016-00-6

%: **100.0000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Base ingredient**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PBT	EC - CEPA DSL	Persistent, Bioaccumulative and inherently Toxic (PBiTH) to humans

SUBSTANCE NOTES: Synonyms: [9006-65-9] Dimethicone; [63148-62-9] Polydimethylsiloxanes A synthetic rubber. Silicone emulsion (antifoam, antiadherence coatings, mold-release agents). Only substance reported in the SDS.

HEAT-TREATED CARBON STEEL, ZINC PLATED

%: 0.0300 - 0.0300 **HPD URL:**

PRODUCT THRESHOLD: 1000 ppm

RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Phosphorous and sulfur are known impurities remaining in steel after manufacturing. Though they are impurities, they are added to the steel elements to improve machining performance.

OTHER MATERIAL NOTES: A616-40 Grade Steel. Zinc plated alloy steels are thru-heated and thru-hardened with a CR+5 zinc plating. This treatment adds a superior strength and corrosion resistance.

IRON

ID: 7439-89-6

%: **98.6800 - 99.1300** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Base material**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Iron is the primary ingredient in steel.

MANGANESE

ID: 7439-96-5

%: **0.7000 - 1.0000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **improve tensile strength**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1B

SUBSTANCE NOTES: Manganese increases hardenability and tensile strength of steel, but to a lesser extent than carbon.

CARBON

ID: **7440-44-0**

%: **0.1700 - 0.2300** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **toughness/hardener**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Carbon content of <0.3% is relatively low to reduce material brittleness.

PHOSPHORUS

ID: **7723-14-0**

%: **Impurity/Residual** GS: **BM-2** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H228 - Flammable solid
MAMMALIAN	US EPA - EPCRA Extremely Hazardous Substances	Extremely Hazardous Substances

SUBSTANCE NOTES: Phosphorous improves machining characteristics and atmospheric corrosion resistance. However, traces remain in the steel as a residual.

SULFUR

ID: **7704-34-9**

%: **Impurity/Residual** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
SKIN IRRITATION	EU - GHS (H-Statements)	H315 - Causes skin irritation

SUBSTANCE NOTES: Traces remain in the steel as an impurity. S is an element which is always present in steel in small quantities. S in steel is introduced through iron ore and fuel (coal and coke). The removal of S during steel making is a tedious and difficult process. S is normally regarded as an impurity in steel and is required to be reduced to the limits of practicality. (refer http://ispatguru.com/free-cutting-steels/)

ZINC

ID: **7440-66-6**

%: **0.0000 - 0.0050** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Plating material**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ACUTE AQUATIC	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life
CHRON AQUATIC	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters

SUBSTANCE NOTES: Zinc Plated 0.005mm colorless

STAINLESS STEEL 300-347 %: 0.0300 HPD URL:

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Residuals and impurities considered were present below the threshold.

OTHER MATERIAL NOTES: Family of stainless steel alloys (301, 302, 303, 304, 316, 347) of the group of austenitic stainless steels with superior corrosion resistance. The two parts covered by this set of substances are: HINGE PIVOT PIN (0.03%) and DOWEL PIN STEEL (0.005%)

IRON ID: 7439-89-6

%: **65.2700** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Base ingredient**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Iron is the primary ingredient in steel.

CHROMIUM ID: 7440-47-3

%: **17.0000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **alloying element**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
SKIN SENSITIZE	MAK	Sensitizing Substance Sh - Danger of skin sensitization

SUBSTANCE NOTES: In the metallurgical industry, chromium is used to produce stainless steels, alloy cast irons, nonferrous alloys, and other miscellaneous materials. Use in preparation of alloy steels to enhance corrosion and heat resistance.

NICKEL

ID: 7440-02-0

%: **12.0000** GS: **LT-1** RC: **UNK** NANO: **No** ROLE: **alloying element**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
CANCER	IARC	Group 1 - Agent is Carcinogenic to humans
CANCER	IARC	Group 2B - Possibly carcinogenic to humans
CANCER	CA EPA - Prop 65	Carcinogen
CANCER	US CDC - Occupational Carcinogens	Occupational Carcinogen
CANCER	US NIH - Report on Carcinogens	Known to be a human Carcinogen
CANCER	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
SKIN SENSITIZE	EU - GHS (H-Statements)	H317 - May cause an allergic skin reaction
CANCER	EU - GHS (H-Statements)	H351 - Suspected of causing cancer
ORGAN TOXICANT	EU - GHS (H-Statements)	H372 - Causes damage to organs through prolonged or repeated exposure
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
CANCER	MAK	Carcinogen Group 1 - Substances that cause cancer in man
RESPIRATORY	MAK	Sensitizing Substance Sah - Danger of airway & skin sensitization

SUBSTANCE NOTES: Nickel is primarily used in alloys because it imparts to a product such desirable properties as corrosion resistance, heat resistance, hardness, and strength. (ATSDR)

MOLYBDENUM

ID: 7439-98-7

%: **2.5000** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **alloying element**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
None Found	No warnings found on HPD Priority lists	

SUBSTANCE NOTES: Molybdenum is mainly used as an alloying element in steel, cast iron, and superalloys to increase hardenability, strength, toughness, and corrosion resistance. [Ullmann's Encyclopedia of Industrial Chemistry. 6th ed.Vol 1: Federal Republic of Germany: Wiley-VCH Verlag GmbH & Co. 2003 to Present, p. V22 306 (2003)].

MANGANESE

ID: 7439-96-5

%: **2.0000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **alloying element**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1B

SUBSTANCE NOTES: Metallic manganese (ferromanganese) is used principally in steel production to improve hardness, stiffness, and strength. (EPA 1984; NAS 1973).

SILICON

ID: 7440-21-3

%: **1.0000** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **alloying element**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Silicon combined with manganese is essential as a deoxidizer and a desulfurizing agent for steel.

CARBON

ID: 7440-44-0

%: **0.1500** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **alloying element**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Increasing carbon content in steel increases hardness and strength and improves hardenability.

PHOSPHORUS

ID: 7723-14-0

%: **0.0450** GS: **BM-2** RC: **UNK** NANO: **No** ROLE: **alloying element**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H228 - Flammable solid
MAMMALIAN	US EPA - EPCRA Extremely Hazardous Substances	Extremely Hazardous Substances

SUBSTANCE NOTES: Phosphorous improves machining characteristics and atmospheric corrosion resistance.

SULFUR

ID: 7704-34-9

%: **0.0300** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **alloying element**

HAZARDS:	AGENCY(IES) WITH WARNINGS:

SKIN IRRITATION	EU - GHS (H-Statements)	H315 - Causes skin irritation

SUBSTANCE NOTES: S is an element which is always present in steel in small quantities. S in steel is introduced through iron ore and fuel (coal and coke). The removal of S during steel making is a tedious and difficult process. S is normally regarded as an impurity in steel and is required to be reduced to the limits of practicality. However steels which are to be machined need a certain minimum S content for proper chip formation. Where machining constitutes a major fraction of the end products cost, many types of steel (carbon, alloy, and less often stainless) are intentionally resulfurized just for this reason. (refer http://ispatguru.com/free-cutting-steels/).

AISI 1075 STEEL (SPRING)

%: 0.0100 - 0.0100 **HPD URL:**

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Sulfur and phosphorous are added to the material for machining performance. However they are considered impurities that remain in the steel and can affect its properties.

OTHER MATERIAL NOTES: Steel spring; AISI 1075 carbon steel is more brittle than the lower carbon steels.

IRON

ID: 7439-89-6

%: 98.0000 - 98.0000 GS: LT-P1 RC: UNK NANO: No ROLE: Base material

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Iron is the primary ingredient in steel production.

CARBON

ID: 7440-44-0

%: 0.7000 - 0.8000 GS: LT-UNK RC: UNK NANO: No ROLE: alloying element

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
None Found	No warnings found on HPD Priority lists	

SUBSTANCE NOTES: Increasing carbon content in steel increases hardness and strength and improves hardenability.

MANGANESE

ID: 7439-96-5

%: 0.4000 - 0.7000 GS: LT-P1 RC: UNK NANO: No ROLE: improve tensile strength

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1B

SUBSTANCE NOTES: Metallic manganese (ferromanganese) is used principally in steel production to improve hardness, stiffness, and strength. It is used in carbon steel, stainless steel, high-temperature steel, and tool steel, along with cast iron and superalloys (EPA 1984; NAS 1973).

PHOSPHORUS

ID: 7723-14-0

%: **Impurity/Residual** GS: **BM-2** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H228 - Flammable solid
MAMMALIAN	US EPA - EPCRA Extremely Hazardous Substances	Extremely Hazardous Substances

SUBSTANCE NOTES: This substance is added for machining performance but is considered a residual of manufacturing.

SULFUR

ID: 7704-34-9

%: **Impurity/Residual** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
SKIN IRRITATION	EU - GHS (H-Statements)	H315 - Causes skin irritation

SUBSTANCE NOTES: Steel with low manganese sulfide ratio may contain sulfur in the form of iron sulfide (FeS), which can cause cracking in the weld. Although it increases the tensile strength of steel and improves machinability it is generally regarded as an undesirable impurity because of its embrittling effect. Sulfur can remain as impurity in the steel after manufacturing.

WIRE

%: 0.0100 - 0.0100 **HPD URL:**

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Phosphorous and sulfur are residuals from manufacturing of the steel wire. These substances are added to the material to improve machining performance.

OTHER MATERIAL NOTES: ASTM A228 spring steel wire

IRON

ID: 7439-89-6

%: **97.8000 - 99.0000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Main ingredient**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Iron is the primary ingredient in steel.

CARBON

ID: 7440-44-0

%: 0.7000 - 1.0000 GS: LT-UNK RC: UNK NANO: No ROLE: hardener

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Increasing carbon content in steel increases hardness and strength and improves hardenability.

MANGANESE

ID: 7439-96-5

%: 0.2000 - 0.6000 GS: LT-P1 RC: UNK NANO: No ROLE: improve tensile strength

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1B

SUBSTANCE NOTES: Metallic manganese (ferromanganese) is used principally in steel production to improve hardness, stiffness, and strength. It is used in carbon steel, stainless steel, high-temperature steel, and tool steel, along with cast iron and superalloys (EPA 1984; NAS 1973).

SILICON

ID: 7440-21-3

%: Impurity/Residual GS: LT-UNK RC: UNK NANO: No ROLE: Impurity/Residual

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Silicon is used for making alloys such as ferrosilicon.

PHOSPHORUS

ID: 7723-14-0

%: 0.0000 - 0.0250 GS: BM-2 RC: UNK NANO: No ROLE: additive

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H228 - Flammable solid
MAMMALIAN	US EPA - EPCRA Extremely Hazardous Substances	Extremely Hazardous Substances

SUBSTANCE NOTES: This substance is added for machining performance but is considered a residual of manufacturing.

SULFUR

ID: 7704-34-9

%: **Impurity/Residual** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
SKIN IRRITATION	EU - GHS (H-Statements)	H315 - Causes skin irritation

SUBSTANCE NOTES: S is an element which is always present in steel in small quantities. S in steel is introduced through iron ore and fuel (coal and coke). The removal of S during steel making is a tedious and difficult process. S is normally regarded as an impurity in steel and is required to be reduced to the limits of practicality (refer http://ispatguru.com/free-cutting-steels/)

ECOAT (BLACK CATIONIC EPOXY) %: 0.0100 HPD URL:

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Unknown residuals per manufacturer SDS.

OTHER MATERIAL NOTES: No lead, chrome or zinc

WATER ID: 7732-18-5

%: **78.0000 - 88.0000** GS: **BM-4** RC: **UNK** NANO: **No** ROLE: **major component of an electrocoat bath**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: This epoxy material is water based.

POLYMERS (PETROLEUM), VISCOUS ID: 64741-71-5

%: **10.0000 - 20.0000** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **Binder**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Backbone of the final paint film and provides properties such as corrosion protection and ultraviolet durability

C.I. PIGMENT BLACK 12 ID: 68187-02-0

%: **1.0000 - 1.0000** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **Pigment**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Details of pigment type and components are not unknown.

SOLVENT NAPHTHA (PETROLEUM), HYDRODESULFURIZED MEDIUM ID: 101316-82-9

%: **1.0000 - 1.0000** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **Solvent**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
MAMMALIAN	EU - GHS (H-Statements)	H304 - May be fatal if swallowed and enters airways

SUBSTANCE NOTES: This is used as a solvent in the paint industry.

STAINLESS STEEL 410

%: 0.0010 - 0.0010 **HPD URL:**

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Sulfur and phosphorous impurities can remain in the material after production of the steel.

OTHER MATERIAL NOTES: Grade 410 stainless steels are general-purpose martensitic stainless steels containing 11.5% chromium, which provide good corrosion resistance properties. However, the corrosion resistance of grade 410 steels can be further enhanced by a series of processes such as hardening, tempering and polishing. These grades are less resistant to corrosion when compared to that of austenitic grades.

IRON

ID: **7439-89-6**

%: **83.6800 - 85.6800** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **Base material**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: Martensitic stainless steels alloys have Fe > 80% with chromium <15% and nickel <1%.

CHROMIUM

ID: **7440-47-3**

%: **11.5000 - 13.5000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **alloying element**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
SKIN SENSITIZE	MAK	Sensitizing Substance Sh - Danger of skin sensitization

SUBSTANCE NOTES: In the metallurgical industry, chromium is used to produce stainless steels, alloy cast irons, nonferrous alloys, and other miscellaneous materials. Use in preparation of alloy steels to enhance corrosion and heat resistance.

MANGANESE

ID: **7439-96-5**

%: **1.0000** GS: **LT-P1** RC: **UNK** NANO: **No** ROLE: **alloying element**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	

ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1B

SUBSTANCE NOTES: Metallic manganese (ferromanganese) is used principally in steel production to improve hardness, stiffness, and strength. It is used in carbon steel, stainless steel, high-temperature steel, and tool steel, along with cast iron and superalloys (EPA 1984; NAS 1973).

SILICON

ID: **7440-21-3**

%: **1.0000** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **alloying element**

HAZARDS:	AGENCY(IES) WITH WARNINGS:
None Found	No warnings found on HPD Priority lists

SUBSTANCE NOTES: Silicon combined with manganese is essential as a deoxidizer and a desulfurizing agent for steel.

NICKEL

ID: **7440-02-0**

%: **0.7500** GS: **LT-1** RC: **UNK** NANO: **No** ROLE: **alloying element**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
CANCER	IARC	Group 1 - Agent is Carcinogenic to humans
CANCER	IARC	Group 2B - Possibly carcinogenic to humans
CANCER	CA EPA - Prop 65	Carcinogen
CANCER	US CDC - Occupational Carcinogens	Occupational Carcinogen
CANCER	US NIH - Report on Carcinogens	Known to be a human Carcinogen
CANCER	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
SKIN SENSITIZE	EU - GHS (H-Statements)	H317 - May cause an allergic skin reaction
CANCER	EU - GHS (H-Statements)	H351 - Suspected of causing cancer
ORGAN TOXICANT	EU - GHS (H-Statements)	H372 - Causes damage to organs through prolonged or repeated exposure
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
CANCER	MAK	Carcinogen Group 1 - Substances that cause cancer in man
RESPIRATORY	MAK	Sensitizing Substance Sah - Danger of airway & skin sensitization

SUBSTANCE NOTES: Nickel is primarily used in alloys because it imparts to a product such desirable properties as corrosion resistance, heat resistance, hardness, and strength. (ATSDR)

PHOSPHORUS

ID: 7723-14-0

%: **Impurity/Residual** GS: **BM-2** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
MAMMALIAN	US EPA - EPCRA Extremely Hazardous Substances	Extremely Hazardous Substances
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H228 - Flammable solid

SUBSTANCE NOTES: Phosphorus naturally sticks to iron and can remain as an impurity in the steel.

SULFUR

ID: 7704-34-9

%: **Impurity/Residual** GS: **LT-UNK** RC: **UNK** NANO: **No** ROLE: **Impurity/Residual**

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
SKIN IRRITATION	EU - GHS (H-Statements)	H315 - Causes skin irritation

SUBSTANCE NOTES: Steel with low manganese sulfide ratio may contain sulfur in the form of iron sulfide (FeS), which can cause cracking in the weld. Although it increases the tensile strength of steel and improves machinability it is generally regarded as an undesirable impurity because of its embrittling effect.

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 — **N/A**

CERTIFYING PARTY: Self-declared
APPLICABLE FACILITIES: All
CERTIFICATE URL:

ISSUE DATE: 2018-01-01
EXPIRY DATE:
CERTIFIER OR LAB: None

CERTIFICATION AND COMPLIANCE NOTES:

LCA — **Product Environmental Profile - PEP ecopassport Programme**

CERTIFYING PARTY: Self-declared
APPLICABLE FACILITIES: http://www.pep-ecopassport.org
CERTIFICATE URL: http://register.pep-ecopassport.org/fileadmin/tx_pepmanagement/user_upload/LGRP-00622-V01.01-EN_pdfpep.pdf

ISSUE DATE: 2018-01-01
EXPIRY DATE: 2023-01-01
CERTIFIER OR LAB: PEP ecopassport program

CERTIFICATION AND COMPLIANCE NOTES: Title: Wiremold EFB45BT Evolution Floor Box Flush Style Cover Plate with Solid This is a Type III Environmental Product Declaration in compliance with ISO 14025, ISO 14040, and ISO 14044 and in alignment with EN 15804. It is based on the PCR developed by the PEP ecopassport program and is hosted on their website. More details can be found at http://www.pep-ecopassport.org/.

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

All the materials in the product are declared. There are multiple powder coats but they use the same base resin. Differences between them include pigments and additives. Some substances were not identified due to proprietary information. Commercial references have disclosed materials based on SDS, proprietary ingredients are not released. Impurities and residuals were considered for all materials. The HPD excludes packaging. The powder coat material is based on manufacturer MSDS. None of the proprietary substances are disclosed and the proprietary substances, which are a set of additives only report one of the possible additives of powder coats. The reported additive is for Flow-Control, Poly-n-butylacrylate, 25119-83-9 The whole set of additives is unknown.

Section 6: References

MANUFACTURER INFORMATION

MANUFACTURER: **Legrand**
ADDRESS: **60 Woodlawn Street**
West Hartford CT 06110, United States
WEBSITE: **www.legrand.us/wiremold**

CONTACT NAME: **James W. Forte, P.E.**
TITLE: **EWS Compliance Engineer**
PHONE: **18602633108**
EMAIL: **jim.forte@legrand.us**

KEY

OSHA MSDS Occupational Safety and Health Administration Material Safety Data Sheet
GHS SDS Globally Harmonized System of Classification and Labeling of Chemicals Safety Data Sheet

Hazard Types

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

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 (insuficient data to benchmark)
LT-P1 List Translator Possible Benchmark 1
LT-1 List Translator Likely Benchmark 1
LT-UNK List Translator Benchmark Unknown (insufficient information from List Translator lists to benchmark)
NoGS Unknown (no data on List Translator Lists)

Recycled Types

PreC Preconsumer (Post-Industrial)
PostC Postconsumer
Both Both Preconsumer and Postconsumer
Unk Inclusion of recycled content is unknown
None Does not include recycled content

Other Terms
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.