



## Stainless Steel

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### 1. Identification

#### 1.1. Product identifier

**Product Identity** Stainless Steel Grades: 16 - 6, 21 - 6 - 9, 303, 304 - 304L, 305, 309 - 309S, 31

**Alternate Names** Stainless Steel Grades: 16 - 6, 21 - 6 - 9, 303, 304 - 304L, 305, 309 - 309S, 310 - 310S, 316 - 316L, 317 - 317L, 321, 347 - 348, 403, 405, 410, 416, 430, 446, MSDS # : 500

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Intended use** See Technical Data Sheet.

**Application Method** See Technical Data Sheet.

#### 1.3. Details of the supplier of the safety data sheet

**Company Name** TW Metals Company, Inc.  
The Arboretum 760 Constitution Drive  
Exton PA 19341

#### Emergency

**CHEMTREC (USA)** (800) 424-9300

### 2. Hazard(s) identification

#### 2.1. Classification of the substance or mixture

|                    |  |
|--------------------|--|
| Acute Tox. 5;H303  | May be harmful if swallowed. (Not adopted by US OSHA)  |
| Eye Irrit. 2;H319  | Causes serious eye irritation.   |
| Skin Sens. 1;H317  | May cause an allergic skin reaction.   |
| Resp. Sens. 1;H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled.                       |
| Carc. 2;H351       | Suspected of causing cancer.   |
| STOT RE 1;H372     | Causes damage to organs through prolonged or repeated exposure. Specific Target Organs: (lungs ) |

#### 2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

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### Danger

H303 May be harmful if swallowed.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H334 May cause allergic or asthmatic symptoms or breathing difficulties if inhaled.

H351 Suspected of causing cancer.

H372 Causes damage to organs through prolonged or repeated exposure.

#### [Prevention]:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P261 Avoid breathing dust / fume / gas / mist / vapors / spray.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves / eye protection / face protection.

P285 In case of inadequate ventilation wear respiratory protection.

#### [Response]:

P302+352 IF ON SKIN: Wash with plenty of soap and water.

P304+312 IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.

P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

P308+313 IF exposed or concerned: Get medical advice / attention.

P314 Get Medical advice / attention if you feel unwell.

P321 Specific treatment (see information on this label).

P333+313 If skin irritation or a rash occurs: Get medical advice / attention.

P337+313 If eye irritation persists: Get medical advice / attention.

P341 If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P342+311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor / physician.

P363 Wash contaminated clothing before reuse.

#### [Storage]:

P405 Store locked up.

#### [Disposal]:

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P501 Dispose of contents / container in accordance with local / national regulations.

### 3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

| Ingredient/Chemical Designations                             | Weight %   | GHS Classification   | Notes  |
|--|------------|--|--------|
| Iron<br>CAS Number: 0007439-89-6                             | 50 - 75    | Not Classified   | [1]    |
| Chromium compounds (as Cr (III))<br>CAS Number: 0007440-47-3 | 10 - 25    | Skin Sens. 1;H317<br>Resp. Sens. 1;H334<br>Eye Irrit. 2;H319<br>Aquatic Chronic 4;H413 | [1][2] |
| Nickel<br>CAS Number: 0007440-02-0                           | 10 - 25    | Carc. 2;H351<br>STOT RE 1;H372<br>Skin Sens. 1;H317<br>Aquatic Chronic 3;H412          | [1][2] |
| Manganese compounds (as Mn)<br>CAS Number: 0007439-96-5      | 5 - 10     | Not Classified   | [1][2] |
| Copper<br>CAS Number: 0007440-50-8                           | 1 - 5      | Not Classified   | [1][2] |
| Molybdenum<br>CAS Number: 0007439-98-7                       | 1 - 5      | Not Classified   | [1][2] |
| Aluminum (Al)<br>CAS Number: 0007429-90-5                    | 1 - 5      | Flam. Sol. 1;H228<br>WaterReact. 2;H261  | [1][2] |
| Silicon<br>CAS Number: 0007440-21-3                          | 1 - 5      | Not Classified   | [1][2] |
| Calcium<br>CAS Number: 0007440-70-2                          | 1 - 5      | WaterReact. 2;H261   | [1]    |
| Cobalt compounds (as Co)<br>CAS Number: 0007440-48-4         | 0.10 - 1.0 | Resp. Sens. 1;H334<br>Skin Sens. 1;H317<br>Aquatic Chronic 4;H413                      | [1][2] |

In accordance with paragraph (i) of §1910.1200, the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

\*The full texts of the phrases are shown in Section 16.

### 4. First aid measures

#### 4.1. Description of first aid measures

##### General

In all cases of doubt, or when symptoms persist, seek medical attention.  
Never give anything by mouth to an unconscious person.

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|                   |  |
|-------------------|--|
| <b>Inhalation</b> | Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.  |
| <b>Eyes</b>       | Immediately flush the eyes with large amounts of water for at least 15 minutes, alternately lifting the upper and lower eyelids. After 5 minutes, if appropriate, remove contact lenses and continue flushing the eyes for an additional 15 minutes. Call a physician at once. |
| <b>Skin</b>       | Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.  |
| <b>Ingestion</b>  | Do not induce vomiting. Get medical attention.   |

**4.2. Most important symptoms and effects, both acute and delayed**

|                   |  |
|-------------------|--|
| <b>Overview</b>   | <p>Stainless steel products in their solid state present no inhalation, ingestion or contact health hazard. However, inhaling dusts, fumes or mists which may be generated during certain manufacturing procedures (burning, melting, welding, sawing, brazing, grinding and machining) may be hazardous to your health. Dusts may also be irritating to the unprotected skin or eyes.</p> <p>ACUTE EFFECTS: Excessive exposure to dusts / fumes may cause irritation of eyes, nose or throat. Inhalation of dusts / fumes may result in metal fume fever (metallic taste in mouth, dryness and irritation of throat, chills and fever).</p> <p>CHRONIC EFFECTS: Prolonged inhalation of fumes or dusts may cause a variety of adverse health effects to the respiratory system, including (but not necessarily limited to) lesions of the mucous membrane, bronchitis, pneumonia and cancers of the nasal cavity and respiratory tract.</p> <p>POTENTIAL HEALTH EFFECTS/MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Any pre-existing chronic respiratory condition (asthma, chronic bronchitis, emphysema).</p> <p>ROUTES OF ENTRY: Inhalation (dusts / fumes / mists), Contact with Skin and Eyes (dusts / mists), Ingestion (dusts).</p> <p>Possible cancer hazard. Contains an ingredient which may cause cancer based on animal data (See Section 3 and Section 15 for each ingredient). Risk of cancer depends on duration and level of exposure.</p> <p>See section 2 for further details.</p> |
| <b>Inhalation</b> | May cause allergy or asthma symptoms of breathing difficulties if inhaled.   |
| <b>Eyes</b>       | Causes serious eye irritation.   |
| <b>Skin</b>       | May cause an allergic skin reaction.   |
| <b>Ingestion</b>  | May be harmful if swallowed. (Not adopted by US OSHA)  |

**5. Fire-fighting measures****5.1. Extinguishing media**

Use what is appropriate for surrounding fire.

**5.2. Special hazards arising from the substance or mixture**

Hazardous decomposition: No hazardous decomposition data available.

Avoid breathing dust / fume / gas / mist / vapors / spray.

**5.3. Advice for fire-fighters**

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Nonflammable at low temperatures, but will burn at high temperatures.

ERG Guide No. ----

**6. Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

Put on appropriate personal protective equipment (see section 8).

**6.2. Environmental precautions**

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

**6.3. Methods and material for containment and cleaning up**

No special procedures needed.

**7. Handling and storage**

**7.1. Precautions for safe handling**

Minimize activities which may generate dusts, mists or fumes. Keep areas well ventilated. Use suitable equipment to move materials.

See section 2 for further details. - [Prevention]:

**7.2. Conditions for safe storage, including any incompatibilities**

Handle containers carefully to prevent damage and spillage.

Incompatible materials: Strong Acids (such as Sulfuric, Hydrochloric, Nitric).

See section 2 for further details. - [Storage]:

**7.3. Specific end use(s)**

No data available.

**8. Exposure controls and personal protection**

**8.1. Control parameters**

**Exposure**

| CAS No.      | Ingredient    | Source   | Value                                   |
|--------------|---------------|----------|---|
| 0007429-90-5 | Aluminum (Al) | OSHA     | TWA 15 mg/m3 (total) TWA 5 mg/m3 (resp) |
|              |               | ACGIH    | TWA: 1.0 mg/m3 Revised 2008,            |
|              |               | NIOSH    | TWA 10 mg/m3 (total) TWA 5 mg/m3 (resp) |
|              |               | Supplier | No Established Limit                    |

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|              |                                  |          |   |
|--------------|----------------------------------|----------|---|
| 0007439-89-6 | Iron                             | OSHA     | No Established Limit  |
|              |                                  | ACGIH    | No Established Limit  |
|              |                                  | NIOSH    | No Established Limit  |
|              |                                  | Supplier | No Established Limit  |
| 0007439-96-5 | Manganese compounds (as Mn)      | OSHA     | C 5 mg/m <sup>3</sup> *See specific listings for specific compounds.  |
|              |                                  | ACGIH    | TWA: 0.2 mg/m <sup>3</sup> R  |
|              |                                  | NIOSH    | TWA 1 mg/m <sup>3</sup> ST 3 mg/m <sup>3</sup> *See specific listings for specific compounds.                                   |
|              |                                  | Supplier | No Established Limit  |
| 0007439-98-7 | Molybdenum                       | OSHA     | TWA 15 mg/m <sup>3</sup> [*Note: The PEL also applies to other insoluble molybdenum compounds (as Mo).]                         |
|              |                                  | ACGIH    | TWA: 0.5 mg/m <sup>3</sup> (soluble) TWA: 3 mg/m <sup>3</sup> (insoluble respirable) 10 mg/m <sup>3</sup> (insoluble inhalable) |
|              |                                  | NIOSH    | no established RELs   |
|              |                                  | Supplier | No Established Limit  |
| 0007440-02-0 | Nickel                           | OSHA     | TWA 1 mg/m <sup>3</sup> [*Note: The PEL does not apply to Nickel carbonyl.]   |
|              |                                  | ACGIH    | Insoluble TWA: 0.05 mg/m <sup>3</sup> A1, 1, (I) Soluble TWA: 0.05 mg/m <sup>3</sup> A1, 1, 2B, (I)                             |
|              |                                  | NIOSH    | Ca TWA 0.015 mg/m <sup>3</sup> [*Note: The REL does not apply to Nickel carbonyl.]  |
|              |                                  | Supplier | No Established Limit  |
| 0007440-21-3 | Silicon                          | OSHA     | TWA 15 mg/m <sup>3</sup> (total) TWA 5 mg/m <sup>3</sup> (resp)   |
|              |                                  | ACGIH    | No Established Limit  |
|              |                                  | NIOSH    | TWA 10 mg/m <sup>3</sup> (total) TWA 5 mg/m <sup>3</sup> (resp)   |
|              |                                  | Supplier | No Established Limit  |
| 0007440-47-3 | Chromium compounds (as Cr (III)) | OSHA     | TWA 1 mg/m <sup>3</sup> [*Note: The PEL also applies to insoluble chromium salts.]  |
|              |                                  | ACGIH    | TWA: 0.5 mg/m <sup>3</sup> (III)  |
|              |                                  | NIOSH    | TWA 0.5 mg/m <sup>3</sup>   |
|              |                                  | Supplier | No Established Limit  |
| 0007440-48-4 | Cobalt compounds (as Co)         | OSHA     | TWA 0.1 mg/m <sup>3</sup>   |
|              |                                  | ACGIH    | TWA: 0.02 mg/m <sup>3</sup> 2B  |
|              |                                  | NIOSH    | TWA 0.05 mg/m <sup>3</sup>  |
|              |                                  | Supplier | No Established Limit  |
| 0007440-50-8 | Copper                           | OSHA     | TWA 1 mg/m <sup>3</sup> [*Note: The PEL also applies to other copper compounds (as Cu) except copper fume.]                     |
|              |                                  | ACGIH    | TWA: 0.2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dusts and mists)   |
|              |                                  | NIOSH    | TWA 1 mg/m <sup>3</sup> [*Note: The REL also applies to other copper compounds (as Cu) except Copper fume.]                     |
|              |                                  | Supplier | No Established Limit  |
| 0007440-70-2 | Calcium                          | OSHA     | No Established Limit  |
|              |                                  | ACGIH    | No Established Limit  |
|              |                                  | NIOSH    | No Established Limit  |
|              |                                  | Supplier | No Established Limit  |

The exposure limits for nuisance dust are: OSHA PEL: 15 mg/m<sup>3</sup> (50 mppcf\*) TWA, ACGIH 10 mg/m<sup>3</sup>.



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## Carcinogen Data

| CAS No.      | Ingredient                       | Source | Value   |
|--------------|----------------------------------|--------|---|
| 0007429-90-5 | Aluminum (Al)                    | OSHA   | Select Carcinogen: No   |
|              |                                  | NTP    | Known: No; Suspected: No  |
|              |                                  | IARC   | Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;  |
| 0007439-89-6 | Iron                             | OSHA   | Select Carcinogen: No   |
|              |                                  | NTP    | Known: No; Suspected: No  |
|              |                                  | IARC   | Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;  |
| 0007439-96-5 | Manganese compounds (as Mn)      | OSHA   | Select Carcinogen: No   |
|              |                                  | NTP    | Known: No; Suspected: No  |
|              |                                  | IARC   | Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;  |
| 0007439-98-7 | Molybdenum                       | OSHA   | Select Carcinogen: No   |
|              |                                  | NTP    | Known: No; Suspected: No  |
|              |                                  | IARC   | Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;  |
| 0007440-02-0 | Nickel                           | OSHA   | Select Carcinogen: Yes  |
|              |                                  | NTP    | Known: Yes; Suspected: Yes  |
|              |                                  | IARC   | Group 1: No; Group 2a: No; Group 2b: Yes; Group 3: No; Group 4: No; |
| 0007440-21-3 | Silicon                          | OSHA   | Select Carcinogen: No   |
|              |                                  | NTP    | Known: No; Suspected: No  |
|              |                                  | IARC   | Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;  |
| 0007440-47-3 | Chromium compounds (as Cr (III)) | OSHA   | Select Carcinogen: No   |
|              |                                  | NTP    | Known: No; Suspected: No  |
|              |                                  | IARC   | Group 1: No; Group 2a: No; Group 2b: No; Group 3: Yes; Group 4: No; |
| 0007440-48-4 | Cobalt compounds (as Co)         | OSHA   | Select Carcinogen: Yes  |
|              |                                  | NTP    | Known: No; Suspected: No  |
|              |                                  | IARC   | Group 1: No; Group 2a: No; Group 2b: Yes; Group 3: No; Group 4: No; |
| 0007440-50-8 | Copper                           | OSHA   | Select Carcinogen: No   |
|              |                                  | NTP    | Known: No; Suspected: No  |
|              |                                  | IARC   | Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;  |
| 0007440-70-2 | Calcium                          | OSHA   | Select Carcinogen: No   |
|              |                                  | NTP    | Known: No; Suspected: No  |
|              |                                  | IARC   | Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;  |

## 8.2. Exposure controls

**Respiratory**

Wear NIOSH approved dust / mist / fume respirator when welding or burning this metal.

**Eyes**

Face shields (welding or burning), Safety glasses (cutting or grinding).

**Skin**

Use appropriate protective clothing such as welding aprons and gloves when welding or burning.

**Engineering Controls**

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

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**Other Work Practices** Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

**9. Physical and chemical properties**

|  |  |
|--|--|
| <b>Appearance</b>                                      | Metal Solid  |
| <b>Odor</b>  | Odorless   |
| <b>Odor threshold</b>                                  | Not determined   |
| <b>pH</b>  | Not Measured   |
| <b>Melting point / freezing point</b>                  | Not Measured   |
| <b>Initial boiling point and boiling range</b>         | NA   |
| <b>Flash Point</b>                                     | Nonflammable   |
| <b>Evaporation rate (Ether = 1)</b>                    | Not Measured   |
| <b>Flammability (solid, gas)</b>                       | Not Applicable   |
| <b>Upper/lower flammability or explosive limits</b>    | <b>Lower Explosive Limit:</b> Not Measured<br><b>Upper Explosive Limit:</b> Not Measured |
| <b>Vapor pressure (Pa)</b>                             | NA   |
| <b>Vapor Density</b>                                   | NA   |
| <b>Specific Gravity</b>                                | 7.45- 8.02   |
| <b>Solubility in Water</b>                             | Insoluble  |
| <b>Partition coefficient n-octanol/water (Log Kow)</b> | Not Measured   |
| <b>Auto-ignition temperature</b>                       | NA   |
| <b>Decomposition temperature</b>                       | Not Measured   |
| <b>Viscosity (cSt)</b>                                 | Not Measured   |

**9.2. Other information**

No other relevant information.

**10. Stability and reactivity****10.1. Reactivity**

Hazardous Polymerization will not occur.

**10.2. Chemical stability**

Stable under normal circumstances.

**10.3. Possibility of hazardous reactions**

No data available.

**10.4. Conditions to avoid**

No data available.

**10.5. Incompatible materials**

Strong Acids (such as Sulfuric, Hydrochloric, Nitric).



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## 10.6. Hazardous decomposition products

No hazardous decomposition data available.

## 11. Toxicological information

### Acute toxicity

| Ingredient                                     | Oral LD50, mg/kg              | Skin LD50, mg/kg             | Inhalation Vapor LC50, mg/L/4hr | Inhalation Dust/Mist LC50, mg/L/4hr | Inhalation Gas LC50, ppm |
|--|-------------------------------|------------------------------|---------------------------------|-------------------------------------|--------------------------|
| Iron - (7439-89-6)                             | 30,000.00, Rat - Category: NA | No data available            | No data available               | No data available                   | No data available        |
| Chromium compounds (as Cr (III)) - (7440-47-3) | 422.00, Rat - Category: 4     | No data available            | No data available               | No data available                   | No data available        |
| Nickel - (7440-02-0)                           | No data available             | No data available            | No data available               | No data available                   | No data available        |
| Manganese compounds (as Mn) - (7439-96-5)      | 9,000.00, Rat - Category: NA  | 500.00, Rabbit - Category: 3 | 19.00, Rat - Category: 4        | No data available                   | No data available        |
| Copper - (7440-50-8)                           | 2,500.00, Rat - Category: 5   | >2,000.00, Rat - Category: 5 | No data available               | 5.11, Rat - Category: NA            | No data available        |
| Molybdenum - (7439-98-7)                       | No data available             | No data available            | No data available               | No data available                   | No data available        |
| Aluminum (Al) - (7429-90-5)                    | No data available             | No data available            | No data available               | No data available                   | No data available        |
| Silicon - (7440-21-3)                          | No data available             | No data available            | No data available               | No data available                   | No data available        |
| Calcium - (7440-70-2)                          | No data available             | No data available            | No data available               | No data available                   | No data available        |
| Cobalt compounds (as Co) - (7440-48-4)         | 6,171.00, Rat - Category: NA  | No data available            | No data available               | No data available                   | No data available        |

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

| Classification                | Category | Hazard Description   |
|-------------------------------|----------|--|
| Acute toxicity (oral)         | 5        | May be harmful if swallowed. (Not adopted by US OSHA)                      |
| Acute toxicity (dermal)       | ---      | Not Applicable   |
| Acute toxicity (inhalation)   | ---      | Not Applicable   |
| Skin corrosion/irritation     | ---      | Not Applicable   |
| Serious eye damage/irritation | 2        | Causes serious eye irritation.   |
| Respiratory sensitization     | 1        | May cause allergy or asthma symptoms of breathing difficulties if inhaled. |

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|                        |     |   |
|------------------------|-----|---|
| Skin sensitization     | 1   | May cause an allergic skin reaction.                            |
| Germ cell mutagenicity | --- | Not Applicable  |
| Carcinogenicity        | 2   | Suspected of causing cancer.                                    |
| Reproductive toxicity  | --- | Not Applicable  |
| STOT-single exposure   | --- | Not Applicable  |
| STOT-repeated exposure | 1   | Causes damage to organs through prolonged or repeated exposure. |
| Aspiration hazard      | --- | Not Applicable  |

## 12. Ecological information

### 12.1. Toxicity

Toxic to aquatic life

#### Aquatic Ecotoxicity

| Ingredient                                     | 96 hr LC50 fish, mg/l       | 48 hr EC50 crustacea, mg/l | ErC50 algae, mg/l                              |
|--|-----------------------------|----------------------------|--|
| Iron - (7439-89-6)                             | Not Available               | Not Available              | Not Available                                  |
| Chromium compounds (as Cr (III)) - (7440-47-3) | 77.50, Pimephales promelas  | 1.20, Daphnia magna        | 580.00 (72 hr), Chlorella pyrenoidosa          |
| Nickel - (7440-02-0)                           | Not Available               | Not Available              | Not Available                                  |
| Manganese compounds (as Mn) - (7439-96-5)      | 40.00, Daphnia magna        | Not Available              | Not Available                                  |
| Copper - (7440-50-8)                           | 0.0103, Pimephales promelas | 0.0025, Daphnia magna      | 0.018 (72 hr), Pseudokirchneriella subcapitata |
| Molybdenum - (7439-98-7)                       | Not Available               | Not Available              | Not Available                                  |
| Aluminum (Al) - (7429-90-5)                    | Not Available               | Not Available              | Not Available                                  |
| Silicon - (7440-21-3)                          | Not Available               | Not Available              | Not Available                                  |
| Calcium - (7440-70-2)                          | Not Available               | Not Available              | Not Available                                  |
| Cobalt compounds (as Co) - (7440-48-4)         | 100.00, Danio rerio         | Not Available              | 0.05 (72 hr), Pseudokirchneriella subcapitata  |

### 12.2. Persistence and degradability

There is no data available on the preparation itself.

### 12.3. Bioaccumulative potential

Not Measured

### 12.4. Mobility in soil

No data available.

### 12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

### 12.6. Other adverse effects

No data available.

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**13. Disposal considerations**

**13.1. Waste treatment methods**

Observe all federal, state and local regulations when disposing of this substance.

**14. Transport information**

|   | <b>DOT (Domestic Surface Transportation)</b> | <b>IMO / IMDG (Ocean Transportation)</b>                        | <b>ICAO/IATA</b>                 |
|---|--|---|----------------------------------|
| <b>14.1. UN number</b>                    | Not Applicable                               | Not Regulated   | Not Regulated                    |
| <b>14.2. UN proper shipping name</b>      | Not Regulated                                | Not Regulated   | Not Regulated                    |
| <b>14.3. Transport hazard class(es)</b>   | <b>DOT Hazard Class:</b> Not Applicable      | <b>IMDG:</b> Not Applicable<br><b>Sub Class:</b> Not Applicable | <b>Air Class:</b> Not Applicable |
| <b>14.4. Packing group</b>                | Not Applicable                               | Not Applicable  | Not Applicable                   |
| <b>14.5. Environmental hazards</b>        |  |   |                                  |
| <b>IMDG</b>                               | Marine Pollutant: Yes;                       |   |                                  |
| <b>14.6. Special precautions for user</b> | No further information                       |   |                                  |

**15. Regulatory information**

**Regulatory Overview** The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

**Toxic Substance Control Act ( TSCA)** All components of this material are either listed or exempt from listing on the TSCA Inventory.

**WHMIS Classification** D2A

**US EPA Tier II Hazards**

**Fire:** No  
**Sudden Release of Pressure:** No  
**Reactive:** No  
**Immediate (Acute):** Yes  
**Delayed (Chronic):** Yes

**EPCRA 311/312 Chemicals and RQs (lbs):**

Chromium compounds (as Cr (III)) ( 5,000.00)  
Copper ( 5,000.00)  
Nickel ( 100.00)

**EPCRA 302 Extremely Hazardous:**

Phosphorus

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**EPCRA 313 Toxic Chemicals:**

Aluminum (Al)  
Chromium compounds (as Cr (III))  
Cobalt compounds (as Co)  
Copper  
Manganese compounds (as Mn)  
Nickel

**Proposition 65 - Carcinogens (>0.0%):**

Cobalt compounds (as Co)  
Nickel

**Proposition 65 - Developmental Toxins (>0.0%):**

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

**Proposition 65 - Female Repro Toxins (>0.0%):**

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

**Proposition 65 - Male Repro Toxins (>0.0%):**

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

**New Jersey RTK Substances (>1%):**

Aluminum (Al)  
Calcium  
Chromium compounds (as Cr (III))  
Copper  
Manganese compounds (as Mn)  
Molybdenum  
Nickel  
Silicon

**Pennsylvania RTK Substances (>1%):**

Aluminum (Al)  
Calcium  
Chromium compounds (as Cr (III))  
Copper  
Manganese compounds (as Mn)  
Molybdenum  
Nickel  
Silicon

**16. Other information**

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The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H228 Flammable solid.

H261 In contact with water releases flammable gases.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H334 May cause allergic or asthmatic symptoms or breathing difficulties if inhaled.

H351 Suspected of causing cancer.

H372 Causes damage to organs through prolonged or repeated exposure.

H412 Harmful to aquatic life with long lasting effects.

H413 May cause long lasting harmful effects to aquatic life.

The information contained herein is furnished without warranty of any kind. The above information is believed to be correct but does not purport to be all inclusive and should be used only as a guide. Users should make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.

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