# SAFETY DATA SHEET

## WC-106 products

### Section 1. Identification

<table>
<thead>
<tr>
<th>GHS product identifier</th>
<th>WC-106 products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other means of identification</td>
<td>WC-106 (011006), WC-106-7 (ZWC106-07), WC-106-11 (ZWC106-11)</td>
</tr>
<tr>
<td>Product type</td>
<td>Powder.</td>
</tr>
</tbody>
</table>

**Relevant identified uses of the substance or mixture and uses advised against**

Not applicable.

**Supplier's details**

Praxair Surface Technologies, Inc.  
1555 Main Street  
Indianapolis, IN 46224  
USA  
317-240-2650

**Emergency telephone number (with hours of operation)**

317-240-2484 7:00am - 3:30pm ET Mon-Fri  
Chemtrec: 1-800-424-9300

### Section 2. Hazards identification

**OSHA/HCS status**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture**

- SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B
- CARCINOGENICITY - Category 2

**GHS label elements**

- Hazard pictograms

**Signal word**

Warning

**Hazard statements**

Causes eye irritation.  
Suspected of causing cancer.

**Precautionary statements**

**Prevention**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear eye or face protection. Wash hands thoroughly after handling.

**Response**

IF exposed or concerned: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF eye irritation persists: Get medical attention.

**Storage**

Store locked up.

**Disposal**

Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Hazards not otherwise classified**

Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.
Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>WC-106 products</td>
<td>100</td>
<td>7440-33-7</td>
</tr>
<tr>
<td>tungsten</td>
<td>&gt;75</td>
<td>7440-48-4</td>
</tr>
<tr>
<td>cobalt</td>
<td>5 - 20</td>
<td>7440-44-0</td>
</tr>
<tr>
<td>carbon</td>
<td>1 - 5</td>
<td></td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact: Wash out mouth with water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: Causes eye irritation.

Inhalation: Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact: No known significant effects or critical hazards.

Ingestion: May be irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact: Adverse symptoms may include the following:

- irritation
- watering
- redness
## Section 4. First aid measures

| Protection of first-aiders | No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. |
| Notes to physician | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| Specific treatments | No specific treatment. |

### Skin contact

| No specific data. |

### Ingestion

| No specific data. |

### Indication of immediate medical attention and special treatment needed, if necessary

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

| Suitable extinguishing media | Use an extinguishing agent suitable for the surrounding fire. |
| Unsuitable extinguishing media | None known. |

### Specific hazards arising from the chemical

| Decomposition products may include the following materials: |
| carbon dioxide |
| carbon monoxide |
| metal oxide/oxides |

### Special protective actions for fire-fighters

| Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |

### Special protective equipment for fire-fighters

| Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

| For non-emergency personnel | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| For emergency responders | If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |

### Environmental precautions

| Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |

### Methods and materials for containment and cleaning up

| Small spill | Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. |
Section 6. Accidental release measures

Large spill: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing dust. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Storage: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>tungsten</td>
<td>ACGIH TLV (United States, 6/2013). TWA: 5 mg/m³, (as W) 8 hours. STEL: 10 mg/m³, (as W) 15 minutes. NIOSH REL (United States, 10/2013). TWA: 5 mg/m³, (as W) 10 hours. STEL: 10 mg/m³, (as W) 15 minutes. OSHA PEL 1989 (United States, 3/1989). Notes: as Co TWA: 0.05 mg/m³, (as Co) 8 hours. OSHA PEL (United States, 2/2013). Notes: as Co TWA: 0.1 mg/m³, (as Co) 8 hours. NIOSH REL (United States, 10/2013). Notes: as Co TWA: 0.05 mg/m³, (as Co) 10 hours. Form: Dust and fumes ACGIH TLV (United States, 6/2013). Notes: as Co TWA: 0.02 mg/m³, (as Co) 8 hours. Form:</td>
</tr>
<tr>
<td>cobalt</td>
<td></td>
</tr>
</tbody>
</table>
WC-106 products

Section 8. Exposure controls/personal protection

Appropriate engineering controls

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. If operating conditions cause high dust concentrations to be produced, use dust goggles.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Physical state</td>
<td>Solid. [Powder.]</td>
</tr>
<tr>
<td>Color</td>
<td>Gray</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point</td>
<td>3410°C (6170°F)</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower and upper explosive limits</td>
<td>Not available</td>
</tr>
<tr>
<td>VOC content</td>
<td>0 lbs/gal (0 g/l)</td>
</tr>
</tbody>
</table>
Section 9. Physical and chemical properties

Vapor pressure : Not available.
Vapor density : Not available.
Relative density : Not available.
Solubility : Insoluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water : Not available.
Auto-ignition temperature : Not available.
Decomposition temperature : Not available.
Viscosity : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity
Not available.

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>tungsten</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitization
Not available.

Mutagenicity
Not available.

Carcinogenicity
Not available.

Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobalt</td>
<td>-</td>
<td>2B</td>
<td>-</td>
</tr>
</tbody>
</table>

Reproductive toxicity
Not available.

Teratogenicity
Not available.
Section 11. Toxicological information

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure

Inhalation
Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
May be irritating to mouth, throat and stomach.

Skin contact
No known significant effects or critical hazards.

Eye contact
Causes eye irritation.

Ingestion
May be irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact
Adverse symptoms may include the following:
irritation
watering
redness

Inhalation
Adverse symptoms may include the following:
respiratory tract irritation

coughing

Skin contact
No specific data.

Ingestion
No specific data.

Potential acute health effects

Short term exposure
Potential immediate effects
Not available.

Potential delayed effects
Not available.

Long term exposure
Potential immediate effects
Not available.

Potential delayed effects
Not available.

Potential chronic health effects
Not available.

General
Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity
Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity
No known significant effects or critical hazards.

Teratogenicity
No known significant effects or critical hazards.

Developmental effects
No known significant effects or critical hazards.

Fertility effects
No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates
Not available.
Section 11. Toxicological information

Section 12. Ecological information

### Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobalt</td>
<td>Acute LC50 4400 µg/l</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 3.4 mg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

### Persistence and degradability

Not available.

### Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobalt</td>
<td>-</td>
<td>15600</td>
<td>high</td>
</tr>
</tbody>
</table>

### Mobility in soil

- **Soil/water partition coefficient (K_{oc})**: Not available.

### Other adverse effects

: No known significant effects or critical hazards.

Section 13. Disposal considerations

- The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- **UN proper shipping name**: Not regulated.
- **Transport hazard class(es)**: No.
- **Packing group**: No.
- **Environmental hazards**: No.
- **Additional information**: No.
Section 14. Transport information

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

Section 15. Regulatory information

U.S. Federal regulations

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)
Clean Air Act Section 602 Class I Substances
Clean Air Act Section 602 Class II Substances
DEA List I Chemicals (Precursor Chemicals)
DEA List II Chemicals (Essential Chemicals)

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ:

SARA 311/312

Classification: Immediate (acute) health hazard Delayed (chronic) health hazard

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>WC-106 products tungsten</td>
<td>100</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>cobalt</td>
<td>&gt;75</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>5 - 20</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts: The following components are listed: TUNGSTEN; COBALT

New York: None of the components are listed.

New Jersey: The following components are listed: TUNGSTEN; COBALT

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Section 15. Regulatory information

**Pennsylvania** : The following components are listed: TUNGSTEN; COBALT FUME

**California Prop. 65**

**WARNING:** This product contains a chemical known to the State of California to cause cancer.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Cancer</th>
<th>Reproductive</th>
<th>No significant risk level</th>
<th>Maximum acceptable dosage level</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobalt</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

**Canada inventory** : All components are listed or exempted.

**International regulations**

**International lists**

- **Australia inventory (AICS):** All components are listed or exempted.
- **China inventory (IECSC):** All components are listed or exempted.
- **Japan inventory:** Not determined.
- **Korea inventory:** All components are listed or exempted.
- **Malaysia Inventory (EHS Register):** Not determined.
- **New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.
- **Philippines inventory (PICCS):** All components are listed or exempted.
- **Taiwan inventory (CSNN):** Not determined.

**Chemical Weapons Convention List Schedule I Chemicals** : Not listed

**Chemical Weapons Convention List Schedule II Chemicals** : Not listed

**Chemical Weapons Convention List Schedule III Chemicals** : Not listed

Section 16. Other information

**History**

- **Date of printing** : 4/1/2014.
- **Date of issue/Date of revision** : 4/1/2014.

**Key to abbreviations**

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- UN = United Nations

**References** : Not available.

**Notice to reader**

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.