1 Identification

· Product identifier

· Trade name: Cobalt 1000 µg/g in Mineral Oil

· Article number: COOMS

· Details of the supplier of the safety data sheet

· Manufacturer/Supplier:
  High-Purity Standards
  7221 Investment Drive, North Charleston, SC 29418 United States
  Telephone: +1-843-767-7900
  Fax: +1-843-767-7906
  highpuritystandards.com
  Email: info@highpuritystandards.com

· Information department: Product safety department

· Emergency telephone number:
  INFOTRAC
  Emergency telephone numbers 1-800-535-5053
  Other emergency telephone numbers 1-352-323-3500

2 Hazard(s) identification

· Classification of the substance or mixture

  ![GHS08 Health hazard](image)

  Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  Carc. 2 H351 Suspected of causing cancer.
  Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

  ![GHS07](image)

  Skin Sens. 1 H317 May cause an allergic skin reaction.

· Label elements

· GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms

  ![GHS08](image)

· Signal word Danger

· Hazard-determining components of labeling:
  White mineral oil, petroleum

(Contd. on page 2)
Trade name: Cobalt 1000 µg/g in Mineral Oil

• **Hazard statements**
  - H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  - H317 May cause an allergic skin reaction.
  - H351 Suspected of causing cancer.
  - H304 May be fatal if swallowed and enters airways.

• **Precautionary statements**
  - Obtain special instructions before use.
  - Do not handle until all safety precautions have been read and understood.
  - Avoid breathing dust/fume/gas/mist/vapors/spray.
  - Contaminated work clothing must not be allowed out of the workplace.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - [In case of inadequate ventilation] wear respiratory protection.
  - If swallowed: Immediately call a poison center/doctor.
  - Specific treatment (see on this label).
  - Do NOT induce vomiting.
  - If on skin: Wash with plenty of water.
  - If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
  - If exposed or concerned: Get medical advice/attention.
  - If skin irritation or rash occurs: Get medical advice/attention.
  - If experiencing respiratory symptoms: Call a poison center/doctor.
  - Wash contaminated clothing before reuse.
  - Store locked up.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.

• **Classification system:**
  - **NFPA ratings (scale 0 - 4)**
    - Health = 0
    - Fire = 1
    - Reactivity = 0
  - **HMIS-ratings (scale 0 - 4)**
    - Health = 0
    - Fire = 1
    - Reactivity = 0

• **Other hazards**
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.

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**3 Composition/information on ingredients**

• **Chemical characterization: Mixtures**
• **Description:** Mixture of the substances listed below with nonhazardous additions.
Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2020
Reviewed on 05/23/2020

Trade name: Cobalt 1000 µg/g in Mineral Oil

(Contd. of page 2)

<table>
<thead>
<tr>
<th>Dangerous components:</th>
</tr>
</thead>
<tbody>
<tr>
<td>8042-47-5 White mineral oil, petroleum 99.9%</td>
</tr>
<tr>
<td>7440-48-4 cobalt 0.1%</td>
</tr>
</tbody>
</table>

4 First-aid measures

· Description of first aid measures
  · After inhalation: Supply fresh air and be sure to call for a doctor. In case of unconsciousness place patient stably in side position for transportation.
  · After skin contact: Immediately wash with water and soap and rinse thoroughly.
  · After eye contact: Rinse opened eye for several minutes under running water.
  · After swallowing: If symptoms persist consult doctor.
· Information for doctor:
  · Most important symptoms and effects, both acute and delayed No further relevant information available.
  · Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

· Extinguishing media
  · Suitable extinguishing agents: Use fire fighting measures that suit the environment.
  · Special hazards arising from the substance or mixture No further relevant information available.
· Advice for firefighters
  · Protective equipment: No special measures required.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures Not required.
· Environmental precautions:
  Dilute with plenty of water.
  Do not allow to enter sewers/surface or ground water.
· Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
· Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

(Contd. on page 4)
7 Handling and storage

· Handling:
· Precautions for safe handling
  Ensure good ventilation/exhaustion at the workplace.
  Open and handle receptacle with care.
  Prevent formation of aerosols.
· Information about protection against explosions and fires: Keep respiratory protective device available.
· Conditions for safe storage, including any incompatibilities
· Storage:
· Requirements to be met by storerooms and receptacles: No special requirements.
· Information about storage in one common storage facility: Not required.
· Further information about storage conditions: Keep receptacle tightly sealed.
· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.
· Control parameters
· Components with limit values that require monitoring at the workplace:
  The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
  At this time, the remaining constituent has no known exposure limits.
### Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>Substance</th>
<th>BEI</th>
<th>Medium</th>
<th>Time</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-48-4 cobalt</td>
<td>15 µg/L</td>
<td>urine</td>
<td>end of shift at end of workweek</td>
<td>Cobalt (background)</td>
</tr>
<tr>
<td></td>
<td>1 µg/L</td>
<td>blood</td>
<td>end of shift at end of workweek</td>
<td>Cobalt (background, semi-quantitative)</td>
</tr>
</tbody>
</table>

### Additional information:
The lists that were valid during the creation were used as basis.

### Exposure controls

#### Personal protective equipment:

#### General protective and hygienic measures:
- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.

#### Breathing equipment:
- In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

#### Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

#### Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

#### Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

#### Eye protection:
Goggles recommended during refilling.
9 Physical and chemical properties

- Information on basic physical and chemical properties
  - General Information
    - Appearance: Liquid
    - Color: colorless
    - Odor: Characteristic
    - Odor threshold: Not determined.
  - pH-value: Not determined.
  - Change in condition
    - Melting point/Melting range: Undetermined.
    - Boiling point/Boiling range: Undetermined.
  - Flash point: >112 °C (>233.6 °F)
  - Flammability (solid, gaseous): Not applicable.
  - Decomposition temperature: Not determined.
  - Auto igniting: Product is not selfigniting.
  - Danger of explosion: Product does not present an explosion hazard.
  - Explosion limits:
    - Lower: Not determined.
    - Upper: Not determined.
  - Vapor pressure: Not determined.
  - Density: Not determined.
    - Relative density: Not determined.
    - Vapor density: Not determined.
    - Evaporation rate: Not determined.
  - Solubility in / Miscibility with Water: Fully miscible.
  - Partition coefficient (n-octanol/water): Not determined.
  - Viscosity:
    - Dynamic: Not determined.
    - Kinematic: Not determined.
  - Solvent content:
    - VOC content: 0.00 %
      - 0.0 g/l / 0.00 lb/gal
  - Solids content: 0.1 %
  - Other information No further relevant information available.
10 Stability and reactivity

· Reactivity: No further relevant information available.
· Chemical stability
· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
· Possibility of hazardous reactions: No dangerous reactions known.
· Conditions to avoid: No further relevant information available.
· Incompatible materials: No further relevant information available.
· Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

· Information on toxicological effects
· Acute toxicity:
  · LD/LC50 values that are relevant for classification:
    | 7440-48-4 cobalt | Oral LD50 6,170 mg/kg (rat) |
· Primary irritant effect:
  · on the skin: No irritant effect.
  · on the eye: No irritating effect.
· Sensitization:
  Sensitization possible through inhalation.
  Sensitization possible through skin contact.
· Additional toxicological information:
  The product shows the following dangers according to internally approved calculation methods for preparations:
  Harmful
  Irritant
· Carcinogenic categories
  · IARC (International Agency for Research on Cancer)
    7440-48-4 cobalt 2B
  · NTP (National Toxicology Program)
    7440-48-4 cobalt R
  · OSHA-Ca (Occupational Safety & Health Administration)
    None of the ingredients is listed.

12 Ecological information

· Toxicity
· Aquatic toxicity: No further relevant information available.
· Persistence and degradability: No further relevant information available.
· Behavior in environmental systems:
· Bioaccumulative potential: No further relevant information available.
Trade name: Cobalt 1000 µg/g in Mineral Oil

- Mobility in soil: No further relevant information available.
- Additional ecological information:
  - General notes:
    Water hazard class 1 (Self-assessment): slightly hazardous for water
    Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
  - Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.

- Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number: not regulated
  - DOT, ADR, IMDG, IATA: not regulated

- UN proper shipping name
  - DOT, ADR, IMDG, IATA: not regulated

- Transport hazard class(es)
  - DOT, ADR, ADN, IMDG, IATA: not regulated

- Packing group
  - DOT, ADR, IMDG, IATA: not regulated

- Environmental hazards: Not applicable.

- Special precautions for user: Not applicable.

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

- UN "Model Regulation": not regulated
15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara
  - Section 355 (extremely hazardous substances):
    None of the ingredients is listed.
  - Section 313 (Specific toxic chemical listings):
    7440-48-4 cobalt
  - TSCA (Toxic Substances Control Act):
    All components have the value ACTIVE.
  - Hazardous Air Pollutants
    7440-48-4 cobalt
  - Proposition 65
    - Chemicals known to cause cancer:
      7440-48-4 cobalt
    - Chemicals known to cause reproductive toxicity for females:
      None of the ingredients is listed.
    - Chemicals known to cause reproductive toxicity for males:
      None of the ingredients is listed.
    - Chemicals known to cause developmental toxicity:
      None of the ingredients is listed.
  - Carcinogenic categories
    - EPA (Environmental Protection Agency)
      None of the ingredients is listed.
  - TLV (Threshold Limit Value established by ACGIH)
    7440-48-4 cobalt A3
  - NIOSH-Ca (National Institute for Occupational Safety and Health)
    None of the ingredients is listed.
  - GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
  - Hazard pictograms
    - GHS08
- Signal word Danger
- Hazard-determining components of labeling:
  White mineral oil, petroleum cobalt

(Contd. on page 10)
Trade name: Cobalt 1000 µg/g in Mineral Oil

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  If on skin: Wash with plenty of water.
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  IF exposed or concerned: Get medical advice/attention.
  If skin irritation or rash occurs: Get medical advice/attention.
  If experiencing respiratory symptoms: Call a poison center/doctor.
  Wash contaminated clothing before reuse.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information
This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing SDS: Environment protection department.
- Contact:
  High-Purity Standards
  Tel: 843-767-7900
  Fax: 843-767-7906
- Date of preparation / last revision 05/23/2020 / -
- Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
Trade name: Cobalt 1000 µg/g in Mineral Oil

LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Carc. 2: Carcinogenicity – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1