1 Identification

· Product name: Colloidal Silica Suspension, Water free, 0.05 micron
· Part number: 180-22010
· Application of the substance / the mixture Polishing solution
· Details of the supplier of the safety data sheet
· Manufacturer/Supplier:
  Allied High Tech Products Inc.
  2376 East Pacifica Place
  USA-RANCHO DOMINGUEZ, CA 90220
  USA
  info@alliedighthtech.com
· Information department: Product safety department
· Emergency telephone number:
  During normal opening times: +1 (310) 635-2466
  Chemtrec: +1 (202) 483-7616

2 Hazard(s) identification

· Classification of the substance or mixture
  GHS08 Health hazard
  STOT RE 2  H373 May cause damage to the lung, the kidneys, the liver, the reproductive system, the mucous membrane, the blood and the nervous system through prolonged or repeated exposure.
· Additional information: Hazard determining components of labeling may be partially affected by: ethylene glycol

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

GHS08

· Signal word Warning
· Hazard statements
  May cause damage to the lung, the kidneys, the liver, the reproductive system, the mucous membrane, the blood and the nervous system through prolonged or repeated exposure.
· Precautionary statements
  Do not breathe dust/fume/gas/mist/vapors/spray.
  Get medical advice/attention if you feel unwell.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)
Product name: Colloidal Silica Suspension, Water free, 0.05 micron

- 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.

### 3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Hazardous Components</th>
<th>Acute Tox. 4, H302</th>
<th>50-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>107-21-1 ethylene glycol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7631-86-9 silicon dioxide, chemically prepared</td>
<td></td>
<td>25-50%</td>
</tr>
</tbody>
</table>

### 4 First-aid measures

- Description of first aid measures
  - General information:
    - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - After inhalation: Supply fresh air; consult doctor in case of complaints.
  - After skin contact: Generally the product does not irritate the skin.
  - 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
      - Nausea
      - Dizziness
      - Headache
  - 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: During heating or in case of fire poisonous gases are produced.
- Advice for firefighters
- Protective equipment: Mouth respiratory protective device.

### 6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Mount respiratory protective device.
- Environmental precautions: Dilute with plenty of 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.
Product name: Colloidal Silica Suspension, Water free, 0.05 micron

· 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.

· Protective Action Criteria for Chemicals

<table>
<thead>
<tr>
<th>PAC-1:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>107-21-1 ethylene glycol</td>
<td>30 ppm</td>
</tr>
<tr>
<td>7631-86-9 silicon dioxide, chemically prepared</td>
<td>18 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-2:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>107-21-1 ethylene glycol</td>
<td>150 ppm</td>
</tr>
<tr>
<td>7631-86-9 silicon dioxide, chemically prepared</td>
<td>740 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-3:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>107-21-1 ethylene glycol</td>
<td>900 ppm</td>
</tr>
<tr>
<td>7631-86-9 silicon dioxide, chemically prepared</td>
<td>4,500 mg/m³</td>
</tr>
</tbody>
</table>

7 Handling and storage

· Handling:
· Precautions for safe handling 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:
  Store in a cool location.
  No special requirements.
· Information about storage in one common storage facility: Not required.
· Further information about storage conditions: Store receptacle in a well ventilated area.
· 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

<table>
<thead>
<tr>
<th>Components with limit values that require monitoring at the workplace:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>107-21-1 ethylene glycol</td>
<td></td>
</tr>
<tr>
<td>TLV Short-term value: 10** mg/m³, 50* ppm</td>
<td></td>
</tr>
<tr>
<td>Long-term value: 25* ppm</td>
<td></td>
</tr>
<tr>
<td>*vapor fraction: **inh. fraction, aerosol only</td>
<td></td>
</tr>
<tr>
<td>WEEL 1 (2)</td>
<td></td>
</tr>
<tr>
<td>7631-86-9 silicon dioxide, chemically prepared</td>
<td></td>
</tr>
<tr>
<td>PEL Long-term value: 6 mg/m³</td>
<td></td>
</tr>
<tr>
<td>TLV Long-term value: 10 mg/m³</td>
<td></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.
  Wash hands before breaks and at the end of work.
  Store protective clothing separately.

· Breathing equipment: Use suitable respiratory protective device when high concentrations are present.

(Contd. on page 4)
· Protection of hands:
  Protective gloves

· Material of gloves
  Nitrile rubber, NBR
  PVC gloves

· 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:
  Tightly sealed goggles

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
  - Form: Suspension
  - Color: Translucent
  - Odor: Mild
  - Odor threshold: Not determined.

- **pH-value at 20 °C (68 °F):** 8.9 (5% in DI water)

- **Change in condition**
  - Melting point/Melting range: 13 °C (55.4 °F) (est.)
  - Boiling point/Boiling range: 195 °C (383 °F)

- **Flash point:** 240 °C (464 °F)

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:** 410 °C (770 °F)

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:**
  - Product does not present an explosion hazard.

- **Explosion limits:**
  - Lower: 3.2 Vol %
  - Upper: 15.3 Vol %

- **Vapor pressure at 20 °C (68 °F):** 0.1 hPa (est.)

- **Density:**
  - Not determined.

- **Relative density**
  - Not determined.

- **Vapor density at 20 °C (68 °F):** 2.14 (est.)

- **Specific gravity:**
  - 1.24

- **Evaporation rate:** <1

- **Solubility in / Miscibility with Water:** Fully miscible.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**
  - Dynamic at 20 °C (68 °F): 21.5 mPas
Product name: Colloidal Silica Suspension, Water free, 0.05 micron

<table>
<thead>
<tr>
<th>Kinematic:</th>
<th>Not determined.</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Solvent content:</td>
<td>73.91 %</td>
</tr>
<tr>
<td>· VOC content:</td>
<td>739.1 g/l / 6.17 lb/gal</td>
</tr>
<tr>
<td>· Solids content:</td>
<td>26.1 %</td>
</tr>
<tr>
<td>· Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

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:** Carbon monoxide and carbon dioxide
- **Additional information:** Hazardous decomposition products may form during combustion.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
  - **LD/LC50 values that are relevant for classification:**
    - **ATE (Acute Toxicity Estimate):**
      - Dermal | LD50 | 7,704 mg/kg (rabbit) |
  - **107-21-1 ethylene glycol**
    - Oral | LD50 | 5,840 mg/kg (rat) |
    - Dermal | LD50 | 9,430 mg/kg (rabbit) |
  - **7631-86-9 silicon dioxide, chemically prepared**
    - Oral | LD50 | 7,000 mg/kg (mouse) |
    - Dermal | LD50 | 2,010 mg/kg (rabbit) |
- **Primary chemical irritant effect:**
  - **on the skin:** No irritant effect.
  - **on the eye:** No irritating effect.
  - **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
  - Abrasive eye irritant
  - Abrasive skin irritant

- **Carcinogenic categories**
  - **IARC (International Agency for Research on Cancer):**
    - 7631-86-9 silicon dioxide, chemically prepared | 3 |
  - **NTP (National Toxicology Program):**
    - None of the ingredients is listed.
  - **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** Moderately / partly biodegradable
13 Disposal considerations

- Waste treatment methods
  - Recommendation: Contact waste processors for recycling information.

- 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
  - DOT, IMDG, IATA: not regulated

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

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

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

- Environmental hazards:
  - Marine pollutant: No

- Special precautions for user:
  - Not applicable.

- Transport in bulk according to Annex II of MARPOL73/78 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):
  - 107-21-1 ethylene glycol

- TSCA (Toxic Substances Control Act):
  - All components have the value ACTIVE.

- Hazardous Air Pollutants
  - 107-21-1 ethylene glycol

(Contd. on page 7)
Product name: Colloidal Silica Suspension, Water free, 0.05 micron

- **Proposition 65**

  - **Chemicals known to cause cancer:**
    None of the ingredients is listed.

  - **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:**
    107-21-1 ethylene glycol

- **Carcinogenic categories**

  - **EPA (Environmental Protection Agency)**
    None of the ingredients is listed.

  - **TLV (Threshold Limit Value established by ACGIH)**
    107-21-1 ethylene glycol

  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    None of the ingredients is listed.

- **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:** Kim Dermit
- **Last revision:** 04/30/2020 / 1.0
- **Abbreviations and acronyms:**
  - 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
  - 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
  - Acute Tox. 4: Acute toxicity – Category 4
  - STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2