1 Identification

· Product name: OpTech Polishing Slurry, 3 micron
· Part number: 90-188020, 90-188020-G
· 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@alliedhightech.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

![GHS07]

Skin Sens. 1  H317  May cause an allergic skin reaction.
Aquatic Acute 3  H402  Harmful to aquatic life.

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

![GHS07]

· Signal word Warning

· Hazard-determining components of labeling:
  2-methyl-2H-isothiazol-3-one
  Triethanolamine
· Hazard statements
  May cause an allergic skin reaction.
  Harmful to aquatic life.
· Precautionary statements
  Avoid breathing dust/fume/gas/mist/vapors/spray
  Contaminated work clothing must not be allowed out of the workplace.

(Contd. on page 2)
Safety Data Sheet
acc. to OSHA HCS

Printing date 05/01/2020
Version 2.0
Last revision 05/01/2020

Product name: OpTech Polishing Slurry, 3 micron

Avoid release to the environment.
Wear protective gloves.
If on skin: Wash with plenty of water.
If skin irritation or rash occurs: Get medical advice/attention.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.
Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
  - NFPA ratings (scale 0 - 4)
    - Health = 0
    - Fire = 0
    - Reactivity = 0
  - HMIS-ratings (scale 0 - 4)
    - Health = 0
    - Fire = 0
    - 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></th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1 aluminium oxide</td>
<td>25-50%</td>
</tr>
<tr>
<td>7631-86-9 silicon dioxide, chemically prepared</td>
<td>10-25%</td>
</tr>
<tr>
<td>102-71-6 Triethanolamine</td>
<td>≥0.1-&lt;1%</td>
</tr>
<tr>
<td>141-43-5 2-aminoethanol</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>2682-20-4 2-methyl-2H-isothiazol-3-one</td>
<td>≥0.025-&lt;0.1%</td>
</tr>
<tr>
<td>111-42-2 2,2′-iminodithanol</td>
<td>&lt;0.1%</td>
</tr>
<tr>
<td>14808-60-7 Quartz (SiO2)</td>
<td>&lt;0.1%</td>
</tr>
<tr>
<td>107-22-2 glyoxal</td>
<td>&lt;0.1%</td>
</tr>
<tr>
<td>Non-hazardous Components:</td>
<td></td>
</tr>
<tr>
<td>7732-18-5 water, distilled, conductivity or of similar purity</td>
<td>50-100%</td>
</tr>
</tbody>
</table>

### 4 First-aid measures

- Description of first aid measures
  - **After inhalation:**
    Supply fresh air and to be sure 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.

(Contd. of page 1)
Product name: OpTech Polishing Slurry, 3 micron

- **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
    - Headache
    - Dizziness
    - Nausea
- **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**:
  - Do not allow to enter sewers/ surface or ground water.
  - Inform respective authorities in case of seepage into water course or sewage system.
  - 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.
- **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>1344-28-1 aluminium oxide</td>
<td>15 mg/m³</td>
</tr>
<tr>
<td>7631-86-9 silicon dioxide, chemically prepared</td>
<td>18 mg/m³</td>
</tr>
<tr>
<td>102-71-6 Triethanolamine</td>
<td>15 mg/m³</td>
</tr>
<tr>
<td>141-43-5 2-aminoethanol</td>
<td>6 ppm</td>
</tr>
<tr>
<td>111-42-2 2,2'-iminodiethanol</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td>14808-60-7 Quartz (SiO2)</td>
<td>0.075 mg/m³</td>
</tr>
<tr>
<td>107-22-2 glyoxal</td>
<td>0.3 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-2:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1 aluminium oxide</td>
<td>170 mg/m³</td>
</tr>
<tr>
<td>7631-86-9 silicon dioxide, chemically prepared</td>
<td>740 mg/m³</td>
</tr>
<tr>
<td>102-71-6 Triethanolamine</td>
<td>240 mg/m³</td>
</tr>
<tr>
<td>141-43-5 2-aminoethanol</td>
<td>170 ppm</td>
</tr>
<tr>
<td>111-42-2 2,2'-iminodiethanol</td>
<td>28 mg/m³</td>
</tr>
<tr>
<td>14808-60-7 Quartz (SiO2)</td>
<td>33 mg/m³</td>
</tr>
<tr>
<td>107-22-2 glyoxal</td>
<td>46 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-3:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1 aluminium oxide</td>
<td>990 mg/m³</td>
</tr>
<tr>
<td>7631-86-9 silicon dioxide, chemically prepared</td>
<td>4,500 mg/m³</td>
</tr>
<tr>
<td>102-71-6 Triethanolamine</td>
<td>1,500 mg/m³</td>
</tr>
</tbody>
</table>

(Contd. on page 4)
Product name: OpTech Polishing Slurry, 3 micron

<table>
<thead>
<tr>
<th>CAS number</th>
<th>Constituent</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>141-43-5</td>
<td>2-aminoethanol</td>
<td>1.000 ppm</td>
</tr>
<tr>
<td>111-42-2</td>
<td>2,2'-iminodiethanol</td>
<td>130 mg/m³</td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Quartz (SiO2)</td>
<td>200 mg/m³</td>
</tr>
<tr>
<td>107-22-2</td>
<td>glyoxal</td>
<td>280 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: No special measures required.

· 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:
  Protect from frost.
  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
· Components with limit values that require monitoring at the workplace:
  The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the remaining constituent has no known exposure limits.

<table>
<thead>
<tr>
<th>CAS number</th>
<th>Constituent</th>
<th>Limit</th>
</tr>
</thead>
</table>
| 1344-28-1  | Aluminium oxide              | Long-term value: 15*: 5** mg/m³
*Total dust; ** Respirable fraction |
|            |                              |               |
|            |                               | REL Long-term value: 10* 5** mg/m³
as Al*Total dust**Respirable/pyro powd./welding f. |
|            |                               | TLV Long-term value: 1* mg/m³
as Al; *as respirable fraction |
| 7631-86-9  | Silicon dioxide, chemically prepared | Long-term value: 6 mg/m³ |
|            |                              |               |
|            |                               | TLV Long-term value: 10 mg/m³ |
| 102-71-6   | Triethanolamine              | Long-term value: 5 mg/m³ |
| 141-43-5   | 2-aminoethanol               | Long-term value: 6 mg/m³, 3 ppm |
|            |                               | REL Short-term value: 15 mg/m³, 6 ppm
Long-term value: 8 mg/m³, 3 ppm |
|            |                               | TLV Short-term value: 15 mg/m³, 6 ppm
Long-term value: 7.5 mg/m³, 3 ppm |
| 111-42-2   | 2,2'-iminodiethanol          | Long-term value: 15 mg/m³, 3 ppm |
|            |                               | REL Long-term value: 15 mg/m³, 3 ppm |
|            |                               | TLV Long-term value: 1* mg/m³, 0.2* ppm
Skin; *inhalable fraction and vapor |
Product name: OpTech Polishing Slurry, 3 micron

<table>
<thead>
<tr>
<th>14808-60-7 Quartz (SiO2)</th>
</tr>
</thead>
</table>
| **PEL** | Long-term value: 0.05* mg/m³  
*resp. dust; 30mg/m³/%SiO2+2 |
| **REL** | Long-term value: 0.05* mg/m³  
*respirable dust |
| **TLV** | Long-term value: 0.025* mg/m³  
*as respirable fraction |

<table>
<thead>
<tr>
<th>107-22-2 glyoxal</th>
</tr>
</thead>
</table>
| **TLV** | Long-term value: 0.1* mg/m³  
DSEN;*as inhalable fraction and vapor |
| **WEEL** | Long-term value: 0.1 mg/m³  
DSEN; (H) |

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

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**
  - Immediately remove all soiled and contaminated clothing.
  - Wash hands before breaks and at the end of work.

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

- **Protection of hands:**

  Protective gloves

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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

- **Material of gloves** Nitrile rubber, NBR

- **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:**

  - **Form:** Solution
  - **Color:** White
  - **Odor:** Light
  - **Odor threshold:** Not determined.

  **pH-value:** 9-10

  **Change in condition**

  - **Melting point/Melting range:** -10 °C (14 °F)
  - **Boiling point/Boiling range:** 110 °C (230 °F)

  **Flash point:** Not applicable.

  **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.
Product name: OpTech Polishing Slurry, 3 micron

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
Keep away from alkaline solutions.
Keep away from oxidising agents and acidic substances.
Keep away from heat.
· 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:

<table>
<thead>
<tr>
<th>ATE (Acute Toxicity Estimate)</th>
<th>Dermal LD50</th>
<th>Oral LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal</td>
<td>16,919 mg/kg (rabbit)</td>
<td>5,010 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>7,000 mg/kg (mouse)</td>
<td>2,010 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

1344-28-1 aluminium oxide

7631-86-9 silicon dioxide, chemically prepared
Product name: OpTech Polishing Slurry, 3 micron

<table>
<thead>
<tr>
<th>102-71-6 Triethanolamine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>8,000 mg/kg (rat)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>141-43-5 2-aminoethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>2,050 mg/kg (rat)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>1,000 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50/4 h</td>
</tr>
<tr>
<td>11 mg/l (ATE)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2682-20-4 2-methyl-2H-isothiazol-3-one</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>100 mg/kg (ATE)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>300 mg/kg (ATE)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50/4 h</td>
</tr>
<tr>
<td>0.05 mg/l (ATE)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>111-42-2 2,2’-iminodiethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>1,600 mg/kg (rat)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>12,200 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>107-22-2 glyoxal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>7,070 mg/kg (rat)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>10,000 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50/4 h</td>
</tr>
<tr>
<td>11 mg/l (ATE)</td>
</tr>
</tbody>
</table>

· Primary chemical irritant effect:
  · on the skin: No irritant effect.
  · on the eye: No irritating effect.
  · Sensitization: Sensitization possible through skin contact.

· Additional toxicological information:

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)
  7631-86-9 silicon dioxide, chemically prepared 3
  102-71-6 Triethanolamine 3
  111-42-2 2,2’-iminodiethanol 2B
  14808-60-7 Quartz (SiO2) 1

· NTP (National Toxicology Program)
  14808-60-7 Quartz (SiO2) K

· 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 biodegradable

· Behavior in environmental systems:
  · Bioaccumulative potential No further relevant information available.
  · 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: 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, ADN, IMDG, IATA: not regulated
- UN proper shipping name
  - DOT, ADN, 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
  - SASA
- Section 355 (extremely hazardous substances):
  - None of the ingredients is listed.
- Section 313 (Specific toxic chemical listings):
  - 1344-28-1 aluminium oxide
  - 111-42-2 2,2'-iminodiethanol
- TSCA (Toxic Substances Control Act):
  - All components have the value ACTIVE.
- Hazardous Air Pollutants
  - 111-42-2 2,2'-iminodiethanol
- Proposition 65
  - Chemicals known to cause cancer:
    - 111-42-2 2,2'-iminodiethanol
    - 14808-60-7 Quartz (SiO2)
- 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.
Product name: OpTech Polishing Slurry, 3 micron

· 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)
    | Chemical | TLV (ppm) |
    |---------|-----------|
    | Aluminium oxide | 1344-28-1 A4 |
    | 2,2’-iminodiethanol | 111-42-2 A3 |
    | Quartz (SiO2) | 14808-60-7 A2 |
    | Glyoxal | 107-22-2 A4 |

  · NIOSH-Ca (National Institute for Occupational Safety and Health)
    | Chemical | NIOSH-Ca |
    |---------|---------|
    | Quartz (SiO2) | 14808-60-7 |

· 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: 05/01/2020 / 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
  Flam. Liq. 4: Flammable liquids – Category 4
  Acute Tox. 3: Acute toxicity – Category 3
  Acute Tox. 4: Acute toxicity – Category 4
  Acute Tox. 2: Acute toxicity – Category 2
  Skin Corr. 1B: Skin corrosion/irritation – Category 1B
  Skin Irrit. 2: Skin corrosion/irritation – Category 2
  Eye Dam. 1: Serious eye damage/eye irritation – Category 1
  Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  Skin Sens. 1: Skin sensitisation – Category 1
  Skin Sens. 1A: Skin sensitisation – Category 1A
  Skin Sens. 1B: Skin sensitisation – Category 1B
  Muta. 2: Germ cell mutagenicity – Category 2
  Carc. 1A: Carcinogenicity – Category 1A
  Carc. 2: Carcinogenicity – Category 2
  STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
  STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
  Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
  Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3
  Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1