1 Identification

· **Product name:** OpTech Polishing Slurry, 3 micron
· **Part number:** 90-188020, -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

  · **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:**
    · Triethanolamine
  
  · **Hazard statements**
    May cause an allergic skin reaction.

  · **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)
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).
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.

3 Composition/information on ingredients

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

Hazardous Components:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1 aluminium oxide</td>
<td>25-50%</td>
</tr>
<tr>
<td>102-71-6 Triethanolamine</td>
<td>≤2.5%</td>
</tr>
<tr>
<td>14808-60-7 Quartz (SiO2)</td>
<td>≤2.5%</td>
</tr>
<tr>
<td>107-22-2 glyoxal</td>
<td>≤2.5%</td>
</tr>
</tbody>
</table>

Non-hazardous Components:

7732-18-5 water, distilled, conductivity or of similar purity | 50-100%

4 First-aid measures

Description of first aid measures
- 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
  - Headache
  - Dizziness

(Contd. of page 1)

(Contd. on page 3)
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.
  - 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).
- 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>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1</td>
<td>aluminium oxide</td>
</tr>
<tr>
<td>15 mg/m³</td>
<td></td>
</tr>
<tr>
<td>102-71-6</td>
<td>Triethanolamine</td>
</tr>
<tr>
<td>15 mg/m³</td>
<td></td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Quartz (SiO2)</td>
</tr>
<tr>
<td>0.075 mg/m³</td>
<td></td>
</tr>
<tr>
<td>107-22-2</td>
<td>glyoxal</td>
</tr>
<tr>
<td>0.3 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-2</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1</td>
<td>aluminium oxide</td>
</tr>
<tr>
<td>170 mg/m³</td>
<td></td>
</tr>
<tr>
<td>102-71-6</td>
<td>Triethanolamine</td>
</tr>
<tr>
<td>240 mg/m³</td>
<td></td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Quartz (SiO2)</td>
</tr>
<tr>
<td>33 mg/m³</td>
<td></td>
</tr>
<tr>
<td>107-22-2</td>
<td>glyoxal</td>
</tr>
<tr>
<td>46 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-3</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1</td>
<td>aluminium oxide</td>
</tr>
<tr>
<td>990 mg/m³</td>
<td></td>
</tr>
<tr>
<td>102-71-6</td>
<td>Triethanolamine</td>
</tr>
<tr>
<td>1,500 mg/m³</td>
<td></td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Quartz (SiO2)</td>
</tr>
<tr>
<td>200 mg/m³</td>
<td></td>
</tr>
<tr>
<td>107-22-2</td>
<td>glyoxal</td>
</tr>
<tr>
<td>280 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

7 Handling and storage

- Handling:
  - Precautions for safe handling: No special precautions are necessary if used correctly.
  - Information about protection against explosions and fires: No special measures required.
Product name: OpTech Polishing Slurry, 3 micron

- Conditions for safe storage, including any incompatibilities
- Storage:
  - Requirements to be met by storerooms and receptacles: Store in a cool location.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: Protect from frost.
  - 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:

<table>
<thead>
<tr>
<th>Compound</th>
<th>PEL Long-term value:</th>
<th>REL Long-term value:</th>
<th>TLV Long-term value:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1 aluminium oxide</td>
<td>15*; 5** mg/m³</td>
<td>10* 5** mg/m³</td>
<td>1* mg/m³</td>
</tr>
<tr>
<td></td>
<td>*Total dust; ** Respirable fraction</td>
<td>as Al*Total dust** Respirable/pyro powd./welding f.</td>
<td>as Al; *as respirable fraction</td>
</tr>
<tr>
<td>102-71-6 Triethanolamine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLV Long-term value: 5 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14808-60-7 Quartz (SiO2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEL Long-term value: 0.05* mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REL Long-term value: 0.05* mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLV Long-term value: 0.025* mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>resp. dust; 30mg/m³/%SiO₂+2</td>
<td>respirable dust; See Pocket Guide App. A</td>
<td>as respirable fraction</td>
</tr>
<tr>
<td>107-22-2 glyoxal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REL See Pocket Guide App. C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLV Long-term value: 0.1* mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSEN; as inhalable fraction and vapor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEEL Long-term value: 0.1 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSEN; (H)</td>
<td></td>
<td></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: Wash hands before breaks and at the end of work.
  - Breathing equipment: Not required.
  - Protection of hands: Not required.
  - Material of gloves Nitrile rubber, NBR
  - Penetration time of glove material

For the mixture of chemicals mentioned below the penetration time has to be at least 120 minutes (Permeation according to EN 374 Part 3: Level 4).

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
# 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>Form</td>
<td>Solution</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Odor</td>
<td>Light</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>pH-value</strong></td>
<td>9-10</td>
</tr>
<tr>
<td><strong>Change in condition</strong></td>
<td></td>
</tr>
<tr>
<td>Melting point/Melting range</td>
<td>-10 °C (14 °F)</td>
</tr>
<tr>
<td>Boiling point/Boiling range</td>
<td>110 °C (230 °F)</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Flammability (solid, gaseous)</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Auto igniting</strong></td>
<td>Product is not selfigniting</td>
</tr>
<tr>
<td><strong>Danger of explosion</strong></td>
<td>Product does not present an explosion hazard</td>
</tr>
<tr>
<td><strong>Explosion limits</strong></td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>Not determined</td>
</tr>
<tr>
<td>Upper</td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Vapor pressure at 20 °C (68 °F)</strong></td>
<td>23 hPa (17.3 mm Hg)</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Specific gravity at 4 °C (39.2 °F)</strong></td>
<td>1.1 g/cm³ (9.1795 lbs/gal) (Water = 1)</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Solubility in / Miscibility with Water</strong></td>
<td>Fully miscible</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water)</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
<td>Not determined</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Solvent content</strong></td>
<td></td>
</tr>
<tr>
<td>Organic solvents</td>
<td>0.6 %</td>
</tr>
<tr>
<td>Water</td>
<td>63.3 %</td>
</tr>
<tr>
<td>VOC content</td>
<td>0.59 %</td>
</tr>
<tr>
<td>5.9 g/l / 0.05 lb/gl</td>
<td></td>
</tr>
<tr>
<td><strong>Solids content</strong></td>
<td>55.2 %</td>
</tr>
<tr>
<td><strong>Other information</strong></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**
  - Keep away from oxidising agents and acidic substances.
  - Do not mix with alkalis.
  - Keep away from heat.
- **Incompatible materials**: No further relevant information available.
- **Hazardous decomposition products**: Carbon monoxide and carbon dioxide
- **Additional information**: Decomposition products may form during combustion.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**:
  - **LD/LC50 values that are relevant for classification**:
    - 1344-28-1 aluminium oxide
      - Oral LD50 5,010 mg/kg (rat)
    - 102-71-6 Triethanolamine
      - Oral LD50 8,000 mg/kg (rat)
    - 107-22-2 glyoxal
      - Oral LD50 7,070 mg/kg (rat)
      - Dermal LD50 10,000 mg/kg (rabbit)
      - Inhalative LC50/4 h 11 mg/l (ATE)
- **Primary chemical irritant effect**:
  - on the skin: No irritant effect.
  - on the eye: No irritating effect.
  - Sensitization: No sensitizing effects known.
- **Additional toxicological information**:
  - **Carcinogenic categories**
    - IARC (International Agency for Research on Cancer)
      - 102-71-6 Triethanolamine 3
      - 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

(Contd. on page 7)
Product name: OpTech Polishing Slurry, 3 micron

- 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: not regulated
- 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 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):
1344-28-1 aluminium oxide

TSCA (Toxic Substances Control Act):
All ingredients are listed.

Proposition 65:
Chemicals known to cause cancer:
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.

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)
1344-28-1 aluminium oxide A4
14808-60-7 Quartz (SiO2) A2
107-22-2 glyoxal A4

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

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
Date of preparation / last revision 06/13/2018 / -

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

PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
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
Mut. 2: Germ cell mutagenicity – Category 2
Carc. 1A: Carcinogenicity – Category 1A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3