1 Identification

- Product name: Alumina Polishing Suspension, De-agglomerated, 0.05 micron and High Purity, De-agglomerated 0.05 - 5 micron
- Part number: 90-187505, 90-187540, 90-187575, 90-187506, 90-187511, 90-187516, 90-187521, 90-187526
- 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@alliedhiightech.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 The product is not classified, according to the Globally Harmonized System (GHS).

3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.
Product name: Alumina Polishing Suspension, De-agglomerated, 0.05 micron and High Purity, De-agglomerated 0.05 - 5 micron

<table>
<thead>
<tr>
<th>Hazardous Components:</th>
<th>57-55-6 propylene glycol</th>
<th>Acute Tox. 4, H302</th>
<th>10-25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1 aluminium oxide</td>
<td></td>
<td></td>
<td>10-25%</td>
</tr>
</tbody>
</table>

| Non-hazardous Components: | Proprietary Ingredient | 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
    Coughing
    Breathing difficulty
- 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 Remove persons from danger area.
- 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.
- 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>57-55-6 propylene glycol</th>
<th>30 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1 aluminium oxide</td>
<td></td>
<td>15 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-2:</th>
<th>57-55-6 propylene glycol</th>
<th>1,300 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1 aluminium oxide</td>
<td></td>
<td>170 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-3:</th>
<th>57-55-6 propylene glycol</th>
<th>7,900 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1 aluminium oxide</td>
<td></td>
<td>990 mg/m³</td>
</tr>
</tbody>
</table>

7 Handling and storage

- Handling:
  - Precautions for safe handling Open and handle receptacle with care.
- Information about protection against explosions and fires:
  - Keep ignition sources away - Do not smoke.
Product name: Alumina Polishing Suspension, De-agglomerated, 0.05 micron and High Purity, De-agglomerated 0.05 - 5 micron

Protect against electrostatic charges.
Prevent impact and friction.

· 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 heat and direct sunlight.
  · 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:
    57-55-6 propylene glycol
    WEEL | Long-term value: 10 mg/m³
    1344-28-1 aluminium oxide
    PEL | 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

· 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.
    Use suitable respiratory protective device in case of insufficient ventilation.
· 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 breakthrough 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: Suspension
    Color: Whitish
    Odor: Odorless
    Odor threshold: Not determined.

(Contd. of page 2)

(Contd. on page 4)
Product name: Alumina Polishing Suspension, De-agglomerated, 0.05 micron and High Purity, De-agglomerated 0.05 - 5 micron

<table>
<thead>
<tr>
<th>· pH-value at 20 °C (68 °F):</th>
<th>5-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Change in condition</td>
<td></td>
</tr>
<tr>
<td>Melting point/Melting range:</td>
<td>Undetermined.</td>
</tr>
<tr>
<td>Boiling point/Boiling range:</td>
<td>Undetermined.</td>
</tr>
<tr>
<td>· Flash point:</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>· Flammability (solid, gaseous):</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>· Decomposition temperature:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Auto igniting:</td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td>· Danger of explosion:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Explosion limits:</td>
<td></td>
</tr>
<tr>
<td>Lower:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Upper:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Vapor pressure:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Density:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Relative density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Vapor density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Evaporation rate</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Solubility in / Miscibility with Water:</td>
<td>Fully miscible.</td>
</tr>
<tr>
<td>· Partition coefficient (n-octanol/water):</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Viscosity:</td>
<td></td>
</tr>
<tr>
<td>Dynamic:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Kinematic:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Solvent content:</td>
<td></td>
</tr>
<tr>
<td>Organic solvents:</td>
<td>12.5 %</td>
</tr>
<tr>
<td>VOC content:</td>
<td>12.50 %</td>
</tr>
<tr>
<td></td>
<td>125.0 g/l / 1.04 lb/gal</td>
</tr>
<tr>
<td>· Solids content:</td>
<td>87.5 %</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
  Keep away from heat.
  Keep away from oxidising agents and acidic substances.
  Keep away from open flames. - No smoking.
· Incompatible materials: No further relevant information available.
· Hazardous decomposition products:
  Carbon monoxide and carbon dioxide
  Nitrogen oxides (NOx)
· 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></th>
<th>Oral</th>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE (Acute Toxicity Estimate)</td>
<td>LD50 16,000 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>57-55-6 propylene glycol</td>
<td>LD50 2,000 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>1344-28-1 aluminium oxide</td>
<td>LD50 20,800 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td>1344-28-1 aluminium oxide</td>
<td>LD50 5,010 mg/kg (rat)</td>
<td></td>
</tr>
</tbody>
</table>

· 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)
  None of the ingredients is listed.

· 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: Not easily biodegradable
  · Behavior in environmental systems:
  · Bioaccumulative potential: Non significant accumulation in organisms
  · 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

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-Number</td>
<td>DOT, ADN, IMDG, IATA not regulated</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>DOT, ADN, IMDG, IATA not regulated</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>DOT, ADN, IMDG, IATA Class not regulated</td>
</tr>
<tr>
<td>Packing group</td>
<td>DOT, IMDG, IATA not regulated</td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td>Marine pollutant: No</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>UN &quot;Model Regulation&quot;:</td>
<td>not regulated</td>
</tr>
</tbody>
</table>

### 15 Regulatory information

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety, health and environmental regulations/legislation specific for the substance or mixture</td>
<td>Sara</td>
</tr>
<tr>
<td>Section 355 (extremely hazardous substances):</td>
<td>None of the ingredients is listed.</td>
</tr>
<tr>
<td>Section 313 (Specific toxic chemical listings):</td>
<td>1344-28-1 aluminium oxide</td>
</tr>
<tr>
<td>TSCA (Toxic Substances Control Act):</td>
<td>All components have the value ACTIVE.</td>
</tr>
<tr>
<td>Hazardous Air Pollutants</td>
<td>None of the ingredients is listed.</td>
</tr>
<tr>
<td>Proposition 65</td>
<td>Chemicals known to cause cancer: None of the ingredients is listed.</td>
</tr>
<tr>
<td></td>
<td>Chemicals known to cause reproductive toxicity for females: None of the ingredients is listed.</td>
</tr>
<tr>
<td></td>
<td>Chemicals known to cause reproductive toxicity for males: None of the ingredients is listed.</td>
</tr>
<tr>
<td></td>
<td>Chemicals known to cause developmental toxicity: None of the ingredients is listed.</td>
</tr>
<tr>
<td></td>
<td>Carcinogenic categories</td>
</tr>
<tr>
<td></td>
<td>EPA (Environmental Protection Agency) None of the ingredients is listed.</td>
</tr>
<tr>
<td>TLV (Threshold Limit Value established by ACGIH)</td>
<td>1344-28-1 aluminium oxide A4</td>
</tr>
<tr>
<td>NIOSH-Ça (National Institute for Occupational Safety and Health)</td>
<td>None of the ingredients is listed.</td>
</tr>
</tbody>
</table>
Product name: Alumina Polishing Suspension, De-agglomerated, 0.05 micron and High Purity, De-agglomerated 0.05 - 5 micron

- **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:** 04/28/2020 / 3.9

**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
- PB: 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