SAFETY DATA SHEET

Date: June 2015

Section #1: PRODUCT AND COMPANY IDENTIFICATION

Lapmaster Wolters, LLC
501 W. Algonquin Road
Mt. Prospect, IL 60056

Telephone: (224) 659-7101 (Office Hours 8:00 a.m. to 5:30 p.m. CST)
24-Hour Emergency Number: Chemtrec – 1-800-424-9300

Product Identification: Abrasive Powder
Product Name: White Calcined Alumina Abrasive Powder
Product Use: Calcined Alumina Abrasive Powder to Lap/Polish Components

2 Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
The product is not classified as hazardous according to GHS regulations.
The product is not classified as hazardous according to the CLP regulation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC Not applicable.
Information concerning particular hazards for human and environment:
The product does not have to be labelled due to the calculation procedure of the "General Classification
guideline for preparations of the EU" in the latest valid version.
Classification system:
The classification is according to the latest editions of the EU-lists, and extended by company and
literature data.
The classification is in accordance with the latest editions of international substances lists, and is
supplemented by information from technical literature and by information provided by the company.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008 Not Regulated
Hazard pictograms Not Regulated
Signal word Not Regulated
Hazard-determining components of labelling: None.
Hazard statements Not Regulated
Hazard description:
WHMIS-symbols: Not hazardous under WHMIS.
NFPA ratings (scale 0 - 4)

Health = 1
Fire = 0
Reactivity = 0

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Trade name: MICRO ALUMINA

- HMIS-ratings (scale 0 - 4)
  - Health = 1
  - Fire = 0
  - Reactivity = 0

- HMIS Long Term Health Hazard Substances
  None of the ingredients is listed.

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

3 Composition/information on ingredients

- 3.2 Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Dangerous components:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 1344-28-1</td>
</tr>
<tr>
<td>EINECS: 215-691-6</td>
</tr>
</tbody>
</table>

- Additional information: For the wording of the listed risk phrases refer to section 16.

4 First aid measures

- 4.1 Description of first aid measures
- General information: No special measures required.

- After inhalation:
  Supply fresh air; consult doctor in case of complaints.
  Provide oxygen treatment if affected person has difficulty breathing.

- After skin contact:
  Brush off loose particles from skin.
  Clean with water and soap.
  If skin irritation continues, consult a doctor.

- After eye contact:
  Remove contact lenses if worn.
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

- After swallowing: Do not induce vomiting; call for medical help immediately.

- 4.2 Most important symptoms and effects, both acute and delayed
  Gastric or intestinal disorders when ingested.
  Nausea in case of ingestion.

- Hazards No further relevant information available.
Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

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4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
For safety reasons unsuitable extinguishing agents: None.

5.2 Special hazards arising from the substance or mixture
Formation of toxic gases is possible during heating or in case of fire.

5.3 Advice for firefighters
Protective equipment:
Wear self-contained respiratory protective device.
Wear fully protective suit.
Additional information No further relevant information available.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use respiratory protective device against the effects of fumes/dust/aerosol.
Ensure adequate ventilation
Avoid formation of dust.
Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions: Do not allow to enter sewers/surface or ground water.

6.3 Methods and material for containment and cleaning up:
Pick up mechanically.
Dispose contaminated material as waste according to item 13.

6.4 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.

7 Handling and storage

7.1 Precautions for safe handling
Prevent formation of dust.
Any unavoidable deposit of dust must be regularly removed.
Information about fire - and explosion protection: No special measures required.

7.2 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:
Store away from foodstuffs.
Protect from humidity and water.
Further information about storage conditions: Store in cool, dry conditions in well sealed receptacles.
Trade name: MICRO ALUMINA

7.3 Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.

8.1 Control parameters

<table>
<thead>
<tr>
<th>Ingredients with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1 aluminium oxide</td>
</tr>
<tr>
<td>PEL (USA)</td>
</tr>
<tr>
<td>REL (USA)</td>
</tr>
<tr>
<td>TLV (USA)</td>
</tr>
<tr>
<td>EL (Canada)</td>
</tr>
<tr>
<td>EV (Canada)</td>
</tr>
</tbody>
</table>

- DNELs No further relevant information available.
- PNECs No further relevant information available.
- Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

- Personal protective equipment:
  - General protective and hygienic measures:
    The usual precautionary measures are to be adhered to when handling chemicals.
    Keep away from foodstuffs, beverages and feed.
    Wash hands before breaks and at the end of work.
    Do not inhale dust / smoke / mist.
    Avoid contact with the eyes.
  - Respiratory protection:
    Use suitable respiratory protective device in case of insufficient ventilation.
    For spills, respiratory protection may be advisable.
    Use respiratory protection when grinding or cutting material.
  - Protection of hands:
    No chemical-protective gloves required.
    Wear gloves for the protection against mechanical hazards according to NIOSH or EN 388.
  - Eye protection:
    Safety glasses

- Body protection:
  Not required under normal conditions of use.
  Protection may be required for spills.

- Limitation and supervision of exposure into the environment No special requirements.
9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:
- Form: Crystalline powder
- Colour: White
- Odour: Odourless
- Odour threshold: Not determined.
- pH-value: Not applicable.

Change in condition
- Melting point/Melting range: 3632 °F / 2000 °C
- Boiling point/Boiling range: Undetermined.

Flash point: Not applicable.

Flammability (solid, gaseous): Not determined.

Auto/Self-ignition temperature: Not determined.

 Decomposition temperature: Not determined.

Self-igniting: Product is not self-igniting.

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

Explosion limits:
- Lower: Not determined.
- Upper: Not determined.

Vapour pressure: Not applicable.

Density at 20 °C: 3,94 g/cm³

Relative density: Not determined.

Vapour density: Not applicable.

Evaporation rate: Not applicable.

Solubility in / Miscibility with water: Insoluble.

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

Viscosity:
- Dynamic: Not applicable.
- Kinematic: Not applicable.

9.2 Other information
No further relevant information available.

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10 Stability and reactivity

- 10.1 Reactivity
- 10.2 Chemical stability
  - Thermal decomposition / conditions to be avoided:
    No decomposition if used and stored according to specifications.
- 10.3 Possibility of hazardous reactions
  Reacts with strong acids and alkali.
  As the product is supplied it is not capable of dust explosion; however enrichment with fine dust causes risk of dust explosion.
- 10.4 Conditions to avoid
  - Moisture.
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products: Toxic metal oxide smoke

11 Toxicological information

- 11.1 Information on toxicological effects
  - Acute toxicity:
  - Primary irritant effect:
    - on the skin: No irritant effect.
    - on the eye: Slight irritant effect on eyes.
  - Sensitization: No sensitizing effects known.
  - Additional toxicological information:
    The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.
    When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

12 Ecological information

- 12.1 Toxicity
  - Aquatic toxicity: Generally not hazardous for water
- 12.2 Persistence and degradability No further relevant information available.
- 12.3 Bioaccumulative potential No further relevant information available.
- 12.4 Mobility in soil No further relevant information available.
- Additional ecological information:
  - General notes:
    Negative ecological effects are, according to the current state of knowledge, not expected.
- 12.5 Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
- 12.6 Other adverse effects No further relevant information available.
13 Disposal considerations

- **13.1 Waste treatment methods**
  - **Recommendation**
    Smaller quantities can be disposed of with household waste.
    Contact waste processors for recycling information.

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

14 Transport information

- **14.1 UN-Number**
  - DOT, ADR, ADN, IMDG, IATA: Not Regulated

- **14.2 UN proper shipping name**
  - DOT, ADR, ADN, IMDG, IATA: Not Regulated

- **14.3 Transport hazard class(es)**
  - DOT, ADR, ADN, IMDG, IATA: Not Regulated

- **14.4 Packing group**
  - DOT, ADR, IMDG, IATA: Not Regulated

- **14.5 Environmental hazards:**
  - Marine pollutant: No

- **14.6 Special precautions for user**
  - Not applicable.

- **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
  - Not applicable.

- **UN “Model Regulation”:** -

15 Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - United States (USA)
  - SARA

- **Section 355 (extremely hazardous substances):**
  - None of the ingredients is listed.

- **Section 313 (Specific toxic chemical listings):**
  - All ingredients are listed.

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

- **Proposition 65 (California):**
  - Chemicals known to cause cancer:
    - Present in trace quantities.

1317-95-9 Silica-Crystalline Tripoli

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38.0.33

- 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.

  - IARC (International Agency for Research on Cancer)
    None of the ingredients is listed.

  - TLV (Threshold Limit Value established by ACGIH)
    1344-28-1 aluminium oxide

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

- Canada

  - Canadian Domestic Substances List (DSL)
    All ingredients are listed.

  - Canadian Ingredient Disclosure list (limit 0.1%)
    None of the ingredients is listed.

  - Canadian Ingredient Disclosure list (limit 1%)
    All ingredients are listed.

- Other regulations, limitations and prohibitive regulations

  - Substances of very high concern (SVHC) according to REACH, Article 57
    None of the ingredients is listed.

- 15.2 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.

- 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
  GHS: Globally Harmonized System of Classification and Labelling of Chemicals
  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)
Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
GHS

Trade name: MICRO ALUMINA

HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)

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THIS PRODUCT IS CERTIFIED TO BE RoHS COMPLIANT

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