SAFETY DATA SHEET

Section 1. Identification

Product name: VEEGUM® ULTRA
Code: 72449
Supplier/Manufacturer: Vanderbilt Minerals, LLC
33 Winfield Street
Norwalk, CT 06855

Chemical name: Magnesium Aluminum Silicate
Synonym: Smectite clay, Bentonite, CAS No. 1302-78-9
Material uses: Personal Care Products
INCI Name: Magnesium Aluminum Silicate

Product type: Solid.

Relevant identified uses of the substance or mixture and uses advised against
Not applicable.

Section 2. Hazards identification

OSHA/HCS status
While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture
Not classified.

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 3%

GHS label elements
Signal word: No signal word.
Hazard statements: No known significant effects or critical hazards.

Precautionary statements
General: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Avoid excessive dust generation. Avoid breathing dust. Use only with adequate ventilation.

Hazard not otherwise classified: Not an acute hazard. May cause mechanical eye or skin irritation. Prolonged inhalation may cause lung injury. Physical form is unlikely to generate dust under normal conditions of use. Material will become slippery when wet.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture
Chemical name: Magnesium Aluminum Silicate

Validation date: 3/10/2015
Date of previous issue: 12/9/2014
Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>CAS number</th>
<th>% by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>smectite clay</td>
<td>12199-37-0</td>
<td>&lt;94</td>
</tr>
<tr>
<td>titanium dioxide</td>
<td>13463-67-7</td>
<td>3</td>
</tr>
<tr>
<td>Proprietary ingredient (NJTSR No. 800983-5041P)</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>quartz (non respirable)</td>
<td>14808-60-7</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Crystalline silica (quartz, as an impurity) contained in this product is encapsulated within the clay particle. Exposure to free respirable quartz is not expected under normal conditions of use and processing of this product. Respirable quartz may be released by grinding, machining or abrading of this product.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

**Description of necessary first aid measures**

- **Eye contact**: Flush with plenty of water for at least 15 minutes, occasionally lifting upper and lower eyelids. If irritation develops and persists, seek medical attention.
- **Skin contact**: Flush skin with plenty of water. Seek medical attention if irritation develops.
- **Inhalation**: Move to fresh air. If respiratory distress develops, seek medical attention.
- **Ingestion**: Unlikely to be toxic by ingestion. Rinse mouth out with water. Do not induce vomiting unless directed to do so by medical personnel. Seek medical attention if significant quantities have been ingested or symptoms occur.

**Most important symptoms/effects, acute and delayed**

**Potential acute health effects**

- **Eye contact**: Not a primary eye irritant. May cause mechanical irritation.
- **Skin contact**: No known significant effects or critical hazards.
- **Inhalation**: No known significant effects or critical hazards.
- **Ingestion**: No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

- **Eye contact**: No specific data.
- **Inhalation**: No specific data.
- **Skin contact**: No specific data.
- **Ingestion**: No specific data.

**Indication of immediate medical attention and special treatment needed, if necessary**

- **Notes to physician**: Treat symptomatically.
- **Specific treatments**: No specific treatment.
- **Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Extinguishing media**

- **Suitable extinguishing media**: This product is not combustible. Use an extinguishing agent suitable for the surrounding fire.
- **Unsuitable extinguishing media**: No restrictions on extinguishing media for this product.

**Specific hazards arising from the chemical**

- **Specific hazards**: No specific fire or explosion hazard. This product is not flammable and does not support fire.

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Date of previous issue : 12/9/2014.
Section 5. Fire-fighting measures

Hazardous thermal decomposition products
Decomposition products may include the following materials:
Oxides of carbon.

Special protective actions for fire-fighters
Product may become slippery when wet.

Special protective equipment for fire-fighters
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders
If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill
Minimize dust generation.
Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill
Minimize dust generation.
Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures
Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Recommended Storage
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Validation date: 3/10/2015.
Date of previous issue: 12/9/2014.
Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>smectite clay</td>
<td>OSHA PEL (United States). TWA: 15 mg/m³ total dust; 5 mg/m³ respirable dust (PNOR)   ACGIH TLV (United States). TWA: 10 mg/m³ total dust; 3 mg/m³ respirable dust (PNOS)</td>
</tr>
<tr>
<td>titanium dioxide</td>
<td>OSHA PEL (United States). TWA 15 mg/m³ from respirable fraction   ACGIH TLV (United States). TWA 10 mg/m³ from respirable fraction</td>
</tr>
<tr>
<td>Proprietary ingredient (NJTSR No. 800983-5041P)</td>
<td>OSHA PEL (United States). TWA: 15 mg/m³ total dust; 5 mg/m³ respirable dust (PNOR)   ACGIH TLV (United States). TWA: 10 mg/m³ total dust; 3 mg/m³ respirable dust (PNOS)</td>
</tr>
<tr>
<td>quartz</td>
<td>OSHA PEL (United States). TWA respirable fraction formula: 10 mg/m³ / % SiO₂ + 2   ACGIH TLV (United States). TWA 0.025 mg/m³ from respirable fraction</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below established levels below recommended exposure limits. If user operations generate dust, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Under controlled laboratory test conditions the granular particulate form of this product was found to produce a 3 fold reduction in airborne respirable dust (<10 microns) when compared to flake particulate forms of the same product. Use in an industrial setting is likely to yield similar aerosol dust suppression. As per sound industrial hygiene practice, however, dust levels should be determined by direct dust monitoring at the work site to address variations in material handling and dust control practices.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Appropriate techniques should be used to remove potentially contaminated clothing.

Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. Recommended: splash goggles

Skin protection

Hand protection

Protective gloves should be worn under normal conditions of use.
Section 8. Exposure controls/personal protection

Body protection
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection
Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: disposable particulate mask

Section 9. Physical and chemical properties

Appearance

| Physical state | Solid. [Granules] |
| Color         | Off-white to tan. |
| Odor          | Odorless.         |
| pH            | Not available.    |
| Melting point | Not available.    |
| Boiling point | Not applicable.   |
| Flash point   | [Product does not sustain combustion.] |
| Evaporation rate | Not applicable. |
| Vapor pressure | Not applicable.  |
| Vapor density | Not applicable.   |
| Relative density | 2.6            |
| Solubility in water | Insoluble |
| Viscosity     | Not available.    |

Section 10. Stability and reactivity

Reactivity
Not reactive.

Chemical stability
The product is stable.

Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid
No specific data.

Incompatible materials
No specific data.

Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>titanium dioxide</td>
<td>LC50 Inhalation Dusts and mists</td>
<td>Rat</td>
<td>&gt;6.82 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;10 g/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;25 g/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>titanium dioxide</td>
<td>Skin - Mild irritant</td>
<td>Human</td>
<td>-</td>
<td>72 hours 300 Micrograms Intermittent</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>titanium dioxide</td>
<td>-</td>
<td>2B</td>
<td>-</td>
</tr>
</tbody>
</table>

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not applicable.

Information on the likely routes of exposure

Not available.

Potential chronic health effects

General
Crystalline silica (quartz, as an impurity) contained in this product is encapsulated within the clay particle. Exposure to free respirable quartz is not expected under normal conditions of use and processing of this product. Respirable quartz may be released by grinding, machining or abrading of this product.

Overexposure to respirable crystalline silica dust can cause silicosis, a form of progressive pulmonary fibrosis. "Inhalable" crystalline silica (quartz) is listed by IARC as a Group 1 carcinogen (lung) based on "sufficient evidence" in occupationally exposed humans and sufficient evidence in animals. Crystalline silica is also listed by the NTP as a known human carcinogen. Some studies have not demonstrated a cancer association and controversy exists concerning the IARC and NTP classification.

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Section 11. Toxicological information

Excessive exposure to any dust may aggravate pre-existing respiratory conditions.

**Carcinogenicity**
No known significant effects or critical hazards.

**Mutagenicity**
No known significant effects or critical hazards.

**Teratogenicity**
No known significant effects or critical hazards.

**Developmental effects**
No known significant effects or critical hazards.

**Fertility effects**
No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**
Not available.

**Other information**
Not available.

Section 12. Ecological information

**Toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>titanium dioxide</td>
<td>Acute LC50 3 mg/l Fresh water</td>
<td>Crustaceans - Ceriodaphnia dubia - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 6.5 mg/l Fresh water</td>
<td>Daphnia - Daphnia pulex - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 2.19 mg/l Fresh water</td>
<td>Fish - Oryzias latipes - Larvae</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1 mg/l Marine water</td>
<td>Algae - Thalassiosira pseudonana - Exponential growth phase</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

**Persistence and degradability**
Not available.

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>titanium dioxide</td>
<td>-</td>
<td>352</td>
<td>low</td>
</tr>
</tbody>
</table>

**Other adverse effects**
No known significant effects or critical hazards.

Section 13. Disposal considerations

**Disposal methods**
The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Validation date**: 3/10/2015. **Date of previous issue**: 12/9/2014.
Section 13. Disposal considerations
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>TDG Classification</td>
<td>Not regulated.</td>
<td>-</td>
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</tr>
<tr>
<td>ADR/RID Class</td>
<td>Not regulated.</td>
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<tr>
<td>IMDG Class</td>
<td>Not regulated.</td>
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<tr>
<td>IATA-DGR Class</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

PG*: Packing group

Section 15. Regulatory information

U.S. Federal regulations
United States inventory (TSCA 8b)

All components are listed or exempted.

SARA 302/304
Composition/information on ingredients
No products were found.

SARA 311/312
Classification
Not applicable.

State regulations
Massachusetts
The following components are listed: TITANIUM DIOXIDE

New York
None of the components are listed.

New Jersey
The following components are listed: TITANIUM DIOXIDE; TITANIUM OXIDE (TiO2); SILICA, QUARTZ; QUARTZ (SiO2)

Pennsylvania
The following components are listed: TITANIUM OXIDE (TiO2); QUARTZ (SiO2)

California Prop. 65
WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

International regulations
Canada inventory
All components are listed or exempted.

Europe inventory
All components are listed or exempted.

International lists

Validation date : 3/10/2015. Date of previous issue : 12/9/2014.
Section 15. Regulatory information

Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): All components are listed or exempted.

Section 16. Other information

Hazardous Material Identification System (U.S.A.)

National Fire Protection Association (U.S.A.)

* Chronic Potential

The customer is responsible for determining the PPE code for this material.

History

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Version: 0.02

Key to abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
UN = United Nations

Information contact

Vanderbilt Global Services, LLC
Corporate Risk Management
1-203-295-2143

Visit www.vanderbiltminerals.com for more information.

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