

## 1. Identification

|                                      |  |
|--------------------------------------|--|
| <b>Product identifier</b>            | <b>EZ 20 Essential Zinc</b>  |
| <b>Other means of identification</b> |  |
| <b>SDS number</b>                    | 112500   |
| <b>Product code</b>                  | 112300, 112301, 112302, 112303, 112304, 112500, 112501, 112502, 112503 |
| <b>Recommended use</b>               | Soil additive, micronutrient.  |
| <b>Recommended restrictions</b>      | None known.  |

### Manufacturer/Importer/Supplier/Distributor information

|                              |   |
|------------------------------|---|
| <b>Manufacturer/Supplier</b> | Advanced Micronutrient Products, Inc.       |
| <b>Address</b>               | 2405 W. Vassar Road (M-15) Reese, MI. 48757 |
| <b>Contact person</b>        | Product Stewardship                         |
| <b>Emergency</b>             | Chemtrec Ph # 800-424-9300 CCN 724829       |
| <b>Email</b>                 | info@ampmicros.com                          |

## 2. Hazard(s) identification

|                              |  |            |
|------------------------------|--|------------|
| <b>Physical hazards</b>      | Not classified.  |            |
| <b>Health hazards</b>        | Acute toxicity, oral                                   | Category 4 |
|                              | Skin corrosion/irritation                              | Category 2 |
|                              | Serious eye damage/eye irritation                      | Category 1 |
| <b>Environmental hazards</b> | Hazardous to the aquatic environment, acute hazard     | Category 1 |
|                              | Hazardous to the aquatic environment, long-term hazard | Category 1 |
| <b>OSHA defined hazards</b>  | Not classified.  |            |

### Label elements



|  |  |
|--|--|
| <b>Signal word</b>                               | Danger   |
| <b>Hazard statement</b>                          | Harmful if swallowed. Causes skin irritation. Causes serious eye damage. Very toxic to aquatic life with long lasting effects.   |
| <b>Precautionary statement</b>                   |  |
| <b>Prevention</b>                                | Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.   |
| <b>Response</b>                                  | If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. |
| <b>Storage</b>                                   | Store away from incompatible materials.  |
| <b>Disposal</b>                                  | Dispose of contents/container in accordance with local/regional/national/international regulations.  |
| <b>Hazard(s) not otherwise classified (HNOC)</b> | None known.  |

## 3. Composition/information on ingredients

### Mixtures

| Chemical name   | CAS number | %     |
|-----------------|------------|-------|
| Zinc sulfate    | 7733-02-0  | 40-50 |
| Magnesium oxide | 1309-48-4  | 10-20 |
| Zinc oxide      | 1314-13-2  | 10-15 |
| Iron sulfate    | 7720-78-7  | 5-10  |
| Urea            | 57-13-6    | 5-10  |
| Calcium sulfate | 7778-18-9  | 1-5   |
| Calcium oxide   | 1305-78-8  | <2.5  |

#### 4. First-aid measures

|   |  |
|---|--|
| <b>Inhalation</b>   | If symptomatic, move to fresh air. Get medical attention if symptoms persist.  |
| <b>Skin contact</b>   | Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. |
| <b>Eye contact</b>  | Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately.                                       |
| <b>Ingestion</b>  | Seek medical advice.   |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Causes serious eye damage. Causes skin irritation.   |
| <b>Indication of immediate medical attention and special treatment needed</b> | Symptoms may be delayed.   |
| <b>General information</b>  | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.   |

#### 5. Fire-fighting measures

|  |  |
|--|--|
| <b>Suitable extinguishing media</b>                                  | Extinguish with foam, carbon dioxide, dry powder or water fog.                                 |
| <b>Unsuitable extinguishing media</b>                                | None known.  |
| <b>Specific hazards arising from the chemical</b>                    | During fire, gases hazardous to health may be formed.  |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire.  |
| <b>Fire fighting equipment/instructions</b>                          | Cool containers exposed to heat with water spray and remove container, if no risk is involved. |
| <b>Specific methods</b>  | Keep unnecessary personnel away.   |
| <b>General fire hazards</b>  | No unusual fire or explosion hazards noted.  |

#### 6. Accidental release measures

|  |   |
|--|---|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Wear appropriate personal protective equipment (See Section 8).                         |
| <b>Methods and materials for containment and cleaning up</b>               | Sweep up or vacuum up spillage and collect in suitable container for disposal.          |
| <b>Environmental precautions</b>   | Prevent further leakage or spillage if safe to do so. Avoid release to the environment. |

#### 7. Handling and storage

|   |   |
|---|---|
| <b>Precautions for safe handling</b>                                | Do not get in eyes, on skin, on clothing. Wear appropriate personal protective equipment. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |
| <b>Conditions for safe storage, including any incompatibilities</b> | Store in tightly closed original container in a dry, cool and well-ventilated place. Store away from incompatible materials (See Section 10). Use appropriate container to avoid environmental contamination. Keep out of reach of children.  |

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components                      | Type | Value                | Form                 |
|---------------------------------|------|----------------------|----------------------|
| Calcium oxide (CAS 1305-78-8)   | PEL  | 5 mg/m <sup>3</sup>  |                      |
| Calcium sulfate (CAS 7778-18-9) | PEL  | 5 mg/m <sup>3</sup>  | Respirable fraction. |
| Dust (CAS not applicable)       | PEL  | 15 mg/m <sup>3</sup> | Total dust.          |
|                                 |      | 5 mg/m <sup>3</sup>  | Respirable fraction. |
| Magnesium oxide (CAS 1309-48-4) | PEL  | 15 mg/m <sup>3</sup> | Total dust.          |
|                                 |      | 15 mg/m <sup>3</sup> | Total particulate.   |
| Zinc oxide (CAS 1314-13-2)      | PEL  | 5 mg/m <sup>3</sup>  | Respirable fraction. |
|                                 |      | 5 mg/m <sup>3</sup>  | Fume.                |
|                                 |      | 15 mg/m <sup>3</sup> | Total dust.          |

#### US. OSHA Table Z-3 (29 CFR 1910.1000)

| Components                | Type | Value                | Form                 |
|---------------------------|------|----------------------|----------------------|
| Dust (CAS not applicable) | TWA  | 5 mg/m <sup>3</sup>  | Respirable fraction. |
|                           |      | 15 mg/m <sup>3</sup> | Total dust.          |
|                           |      | 50 mppcf             | Total dust.          |
|                           |      | 15 mppcf             | Respirable fraction. |

#### US. ACGIH Threshold Limit Values

| Components                      | Type | Value                | Form                  |
|---------------------------------|------|----------------------|-----------------------|
| Calcium oxide (CAS 1305-78-8)   | TWA  | 2 mg/m <sup>3</sup>  |                       |
| Calcium sulfate (CAS 7778-18-9) | TWA  | 10 mg/m <sup>3</sup> | Inhalable fraction.   |
| Dust (CAS not applicable)       | TWA  | 3 mg/m <sup>3</sup>  | Respirable particles. |
|                                 |      | 10 mg/m <sup>3</sup> | Inhalable particles.  |
| Iron sulfate (CAS 7720-78-7)    | TWA  | 1 mg/m <sup>3</sup>  |                       |
| Magnesium oxide (CAS 1309-48-4) | TWA  | 10 mg/m <sup>3</sup> | Inhalable fraction.   |
| Zinc oxide (CAS 1314-13-2)      | STEL | 10 mg/m <sup>3</sup> | Respirable fraction.  |
|                                 | TWA  | 2 mg/m <sup>3</sup>  | Respirable fraction.  |

#### US. NIOSH: Pocket Guide to Chemical Hazards

| Components                      | Type    | Value                | Form        |
|---------------------------------|---------|----------------------|-------------|
| Calcium oxide (CAS 1305-78-8)   | TWA     | 2 mg/m <sup>3</sup>  |             |
| Calcium sulfate (CAS 7778-18-9) | TWA     | 5 mg/m <sup>3</sup>  | Respirable. |
|                                 |         | 10 mg/m <sup>3</sup> | Total       |
| Iron sulfate (CAS 7720-78-7)    | TWA     | 1 mg/m <sup>3</sup>  |             |
| Zinc oxide (CAS 1314-13-2)      | Ceiling | 15 mg/m <sup>3</sup> | Dust.       |
|                                 | STEL    | 10 mg/m <sup>3</sup> | Fume.       |
|                                 | TWA     | 5 mg/m <sup>3</sup>  | Fume.       |
|                                 |         | 5 mg/m <sup>3</sup>  | Dust.       |

#### US. Workplace Environmental Exposure Level (WEEL) Guides

| Components         | Type | Value                | Form               |
|--------------------|------|----------------------|--------------------|
| Urea (CAS 57-13-6) | TWA  | 10 mg/m <sup>3</sup> | Total particulate. |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls** Provide adequate ventilation.

## Individual protection measures, such as personal protective equipment

|                               |  |
|-------------------------------|--|
| <b>Eye/face protection</b>    | Wear safety glasses with side shields (or goggles).  |
| <b>Skin protection</b>        |  |
| <b>Hand protection</b>        | Chemical resistant gloves are recommended.   |
| <b>Other</b>                  | Wear chemical-resistant gloves, footwear and protective clothing appropriate for risk of exposure. Contact chemical protective clothing manufacturer for specific information.   |
| <b>Respiratory protection</b> | If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. |
| <b>Thermal hazards</b>        | Not applicable.  |

**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

### Appearance

**Physical state** Solid.

**Form** Granular.

**Color** Brown.

**Odor** Not available.

**Odor threshold** Not available.

**pH** Not available.

**Melting point/freezing point** Not available.

**Initial boiling point and boiling range** Not available.

**Flash point** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Non flammable.

### Upper/lower flammability or explosive limits

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**Vapor pressure** Not available.

**Vapor density** Not available.

**Relative density** Not available.

### Solubility(ies)

**Solubility (water)** Not available.

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** Not available.

**Decomposition temperature** Not available.

**Viscosity** Not available.

### Other information

**Explosive properties** Not explosive.

**Oxidizing properties** Not oxidizing.

**Particle size** 2 - 3 mm

## 10. Stability and reactivity

**Reactivity** The product is non-reactive under normal conditions of use, storage and transport.

**Chemical stability** Stable at normal conditions.

**Possibility of hazardous reactions** Hazardous polymerization does not occur.

**Conditions to avoid** Humidity. Contact with incompatible materials.

**Incompatible materials** Strong oxidizing substances.  
**Hazardous decomposition products** No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

**Inhalation** Dust may irritate respiratory system.  
**Skin contact** Causes skin irritation.  
**Eye contact** Causes serious eye damage.  
**Ingestion** Harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics** Causes skin irritation. Causes serious eye irritation.

### Information on toxicological effects

**Acute toxicity** Harmful if swallowed.

| Components                   | Species | Test Results |
|------------------------------|---------|--------------|
| Zinc sulfate (CAS 7733-02-0) |         |              |
| <b>Acute</b>                 |         |              |
| <i>Oral</i>                  |         |              |
| LD50                         | Rat     | 920 mg/kg    |
|                              |         | 623 mg/kg    |

**Skin corrosion/irritation** Causes skin irritation.

**Serious eye damage/eye irritation** Causes serious eye irritation.

### Respiratory or skin sensitization

**Respiratory sensitization** Not classified.  
**Skin sensitization** Not a skin sensitizer.

**Germ cell mutagenicity** Not classified.

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

**Reproductive toxicity** Not classified.

**Specific target organ toxicity - single exposure** Not classified.

**Specific target organ toxicity - repeated exposure** Not classified.

**Aspiration hazard** Not classified.

**Chronic effects** Prolonged inhalation may be harmful.

## 12. Ecological information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

| Components                   | Species                                  | Test Results         |
|------------------------------|--|----------------------|
| Zinc oxide (CAS 1314-13-2)   |  |                      |
| <b>Aquatic</b>               |  |                      |
| Crustacea                    | LC50 Water flea ( <i>Daphnia magna</i> ) | 0.098 mg/l, 48 Hours |
| Zinc sulfate (CAS 7733-02-0) |  |                      |
| <b>Aquatic</b>               |  |                      |
| Fish                         | LC50 Carp ( <i>Cyprinus carpio</i> )     | 0.15 mg/l, 96 hours  |

**Persistence and degradability** None known.

### Bioaccumulative potential

**Partition coefficient n-octanol / water (log Kow)**  
 Urea (CAS 57-13-6) -2.11

|                              |                    |
|------------------------------|--------------------|
| <b>Mobility in soil</b>      | No data available. |
| <b>Mobility in general</b>   | No data available. |
| <b>Other adverse effects</b> | Not available.     |

### 13. Disposal considerations

|  |  |
|--|--|
| <b>Disposal instructions</b>                 | Since emptied containers may retain product residue, follow label warnings even after container is emptied.<br>The generation of waste should be avoided or minimized whenever possible. When practical, recycle in an environmentally acceptable, regulatory compliant manner. Dispose of non-recyclable products in accordance with all applicable Federal, State, Provincial, and Local requirements. |
| <b>Hazardous waste code</b>                  | The waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Waste from residues / unused products</b> | Recover and recycle, if practical. Dispose in accordance with all applicable regulations.  |
| <b>Contaminated packaging</b>                | Since emptied containers may retain product residue, follow label warnings even after container is emptied.  |

### 14. Transport information

#### DOT

|                                     |  |
|-------------------------------------|--|
| <b>UN number</b>                    | UN3077   |
| <b>UN proper shipping name</b>      | Environmentally hazardous substances, solid, n.o.s. (Zinc oxide) |
| <b>Transport hazard class(es)</b>   |  |
| <b>Class</b>                        | 9  |
| <b>Subsidiary risk</b>              | -  |
| <b>Label(s)</b>                     | 9  |
| <b>Packing group</b>                | III  |
| <b>Special precautions for user</b> | Not available.   |
| <b>Special provisions</b>           | 8, 146, 335, A112, B54, IB8, IP3, N20, T1, TP33                  |
| <b>Packaging exceptions</b>         | 155  |
| <b>Packaging non bulk</b>           | 213  |
| <b>Packaging bulk</b>               | 240  |

#### IATA

|                                     |   |
|-------------------------------------|---|
| <b>UN number</b>                    | UN3077  |
| <b>UN proper shipping name</b>      | Environmentally hazardous substance, solid, n.o.s. (Zinc oxide) |
| <b>Transport hazard class(es)</b>   |   |
| <b>Class</b>                        | 9   |
| <b>Subsidiary risk</b>              | -   |
| <b>Label(s)</b>                     | 9   |
| <b>Packing group</b>                | III   |
| <b>Environmental hazards</b>        | Yes   |
| <b>ERG Code</b>                     | 9L  |
| <b>Special precautions for user</b> | Not available.  |

#### IMDG

|                                     |   |
|-------------------------------------|---|
| <b>UN number</b>                    | UN3077  |
| <b>UN proper shipping name</b>      | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)         |
| <b>Transport hazard class(es)</b>   |   |
| <b>Class</b>                        | 9   |
| <b>Subsidiary risk</b>              | -   |
| <b>Label(s)</b>                     | 9   |
| <b>Packing group</b>                | III   |
| <b>Environmental hazards</b>        |   |
| <b>Marine pollutant</b>             | Yes   |
| <b>EmS</b>                          | F-A, S-F  |
| <b>Special precautions for user</b> | Read safety instructions, SDS and emergency procedures before handling. |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not available.

### 15. Regulatory information

|                               |  |
|-------------------------------|--|
| <b>US federal regulations</b> | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. |
|-------------------------------|--|



## International Inventories

| Country(s) or region        | Inventory name   | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia                   | Australian Inventory of Chemical Substances (AICS)                     | Yes                    |
| Canada                      | Domestic Substances List (DSL)   | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                    |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | Yes                    |
| Korea                       | Existing Chemicals List (ECL)  | Yes                    |
| New Zealand                 | New Zealand Inventory  | Yes                    |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | Yes                    |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                    |

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

|               |  |
|---------------|--|
| Issue date    | 21-May-2015  |
| Revision date | -  |
| Version #     | 01   |
| HMIS® ratings | Health: 3<br>Flammability: 1<br>Physical hazard: 0 |

### NFPA ratings



### List of abbreviations

**References** C&L Inventory database.

**Disclaimer** The information and recommendations contained in this Safety Data Sheet relate only to the specific material referred to herein (the "Material") and does not relate to the use of such Material in combination with any other material or process. The information and recommendations contained herein are believed to be current and correct as of the date prepared. However, the information and recommendations are presented without warranty, representation or license of any kind, express or implied, with respect to its accuracy, correctness or completeness, and the seller, supplier and manufacturer of the Material and their respective affiliates disclaim all liability for reliance on such information and recommendations. This Data Sheet is not a guarantee of safety. A buyer or user of the Material (a "Recipient") is responsible for ensuring that it has all current information necessary to safely use the Material for its specific purpose. Furthermore, the Recipient assumes all risk in connection with the use of the Material. The Recipient assumes all responsibility for ensuring the Material is used in a safe manner in compliance with applicable environmental, health, safety and security laws, policies and guidelines. The Supplier does not warrant the merchantability of the Material or the fitness of the Material for any particular use and assumes no responsibility for injury or damage caused directly or indirectly by or related to the use of the Material.