1. Identification

Product identifier: POTASSIUM HYDROXIDE PELLETS

Other means of identification:

- CAS number: 1310-58-3
- General purpose solvent.

Recommended use:
Use in accordance with manufacturer's recommendations.

Manufacturer/Importer/Supplier/Distributor information:

- Greenfield Global USA Inc.
  - Company Name
  - Address: 1101 Isaac Shelby Drive
    Shelbyville, KY 40065
  - USA
  - Telephone: 502.232.7600
  - Fax: 502.633.6100

- Greenfield Global USA Inc.
  - Company Name
  - Address: 58 Vale Road
    Brookfield, CT 06804
  - USA
  - Telephone: 203.740.3471
  - Fax: 203.740.3481

Emergency phone number:

- CHEMTREC: 1.800.424.9300 (CCN 17213)
- CHEMTREC: +1.703.527.3887 (CCN 17213)

2. Hazard(s) identification

Physical hazards:
- Corrosive to metals
  Category 1

Health hazards:
- Acute toxicity, oral
  Category 4
- Skin corrosion/irritation
  Category 1A
- Serious eye damage/eye irritation
  Category 1

Environmental hazards:
- Hazardous to the aquatic environment, acute hazard
  Category 3

OSHA defined hazards:
- Not classified.

Label elements:

- Signal word: Danger

Hazard statement:
May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. Harmful to aquatic life.

Precautionary statement:
- Prevention:
  Keep only in original container. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.
Response
If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. 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. Absorb spillage to prevent material damage.

Storage
Store locked up. Store in corrosive resistant container with a resistant inner liner.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)
None known.

Supplemental information
None.

3. Composition/information on ingredients

Substances

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td></td>
<td>1310-58-3</td>
<td>100</td>
</tr>
</tbody>
</table>

Composition comments
All concentrations are in percent by weight unless otherwise indicated.

4. First-aid measures

Inhalation
Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact
Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

Ingestion
Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed
Nausea, vomiting. Diarrhea. Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Coughing.

Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media
The product is not flammable.

Unsuitable extinguishing media
Use fire-extinguishing media appropriate for surrounding materials.

Specific hazards arising from the chemical
Contact with metals may evolve flammable hydrogen gas.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Move containers from fire area if you can do so without risk.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up

Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Precautions for safe handling

Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in tightly closed container. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>Material</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide (CAS 1310-58-3)</td>
<td>Ceiling</td>
<td>2 mg/m³</td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
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<tr>
<th>Material</th>
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<td>Ceiling</td>
<td>2 mg/m³</td>
</tr>
</tbody>
</table>

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

**Eye/face protection**

Wear chemical goggles and face shield.

**Skin protection**

**Hand protection**

Wear appropriate chemical resistant gloves. Neoprene, butyl rubber, nitrile or Viton® gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

**Skin protection**

**Other**

Wear appropriate chemical resistant clothing.

**Respiratory protection**

In case of insufficient ventilation, wear suitable respiratory equipment.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

Keep away from food and drink. 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.

9. Physical and chemical properties

**Appearance**

**Physical state**

Solid.

**Form**

Solid. Pellets.

**Color**

Not available.

**Odor**

Not available.

**Odor threshold**

Not available.
pH 13.5
Melting point/freezing point 681.8 °F (361 °C)
Initial boiling point and boiling range 2408 °F (1320 °C)
Flash point Not available.
Evaporation rate Not available.
Flammability (solid, gas) Not flammable.
Upper/lower flammability or explosive limits
  Flammability limit - lower (%) Not available.
  Flammability limit - upper (%) Not available.
  Explosive limit - lower (%) Not available.
  Explosive limit - upper (%) Not available.
Vapor pressure 1 mmHg (1326.2 °F (719 °C))
Vapor density Not available.
Relative density 2.044 g/cm³
Solubility(ies) Soluble in water
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.
Molecular formula H-K-O
Molecular weight 56.11 g/mol
Oxidizing properties Not oxidizing.

10. Stability and reactivity
Reactivity Reacts violently with strong acids. May be corrosive to metals.
Chemical stability Material is stable under normal conditions.
Possibility of hazardous reactions Hazardous polymerization does not occur.
Conditions to avoid Contact with incompatible materials. Do not mix with other chemicals.
Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information
Information on likely routes of exposure
  Inhalation May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
  Skin contact Causes severe skin burns.
  Eye contact Causes serious eye damage.
  Ingestion Causes digestive tract burns. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics Nausea, vomiting. Diarrhea. Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Coughing.
Information on toxicological effects
  Acute toxicity Harmful if swallowed.
Potassium hydroxide (CAS 1310-58-3)

**Acute**

**Oral**

LD$_{50}$ Rat 273 mg/kg

**Skin corrosion/irritation**

Causes severe skin burns and eye damage.

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Respiratory or skin sensitization**

- **Respiratory sensitization**
  
  Not a respiratory sensitizer.

- **Skin sensitization**
  
  This product is not expected to cause skin sensitization.

**Germ cell mutagenicity**

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity**

- **IARC Monographs. Overall Evaluation of Carcinogenicity**
  
  Not listed.

- **NTP Report on Carcinogens**
  
  Not listed.

  
  Not listed.

**Reproductive toxicity**

This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure**

Not classified.

**Specific target organ toxicity - repeated exposure**

Not classified.

**Aspiration hazard**

Not an aspiration hazard.

**Chronic effects**

Prolonged inhalation may be harmful.

**12. Ecological information**

**Ecotoxicity**

Harmful to aquatic life.

**Persistence and degradability**

No data is available on the degradability of this substance.

**Bioaccumulative potential**

No data available.

**Mobility in soil**

This product is water soluble and may disperse in soil. Expected to be mobile in soil.

**Other adverse effects**

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**13. Disposal considerations**

**Disposal instructions**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations**

Dispose in accordance with all applicable regulations.

**Hazardous waste code**

D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products**

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging**

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
14. Transport information

DOT

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<tr>
<td>UN number</td>
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<tr>
<td>Transport hazard class(es)</td>
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<tr>
<td>Class</td>
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<tr>
<td>Subsidiary risk</td>
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<td>Label(s)</td>
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<td>Environmental hazards</td>
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<td>Special provisions</td>
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IATA

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<td>Packing group</td>
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IMDG

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<tr>
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<td>Transport hazard class(es)</td>
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<td>Marine pollutant</td>
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<td>EmS</td>
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<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
Potassium hydroxide (CAS 1310-58-3) Listed.

SARA 304 Emergency release notification
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
Not listed.

Toxic Substances Control Act (TSCA)
This substance is on the TSCA 8(b) inventory and is designated “active”.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes
Classified hazard categories
- Corrosive to metal
- Acute toxicity (any route of exposure)
- Skin corrosion or irritation
- Serious eye damage or eye irritation

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations
- Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
  Not regulated.
- Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
  Not regulated.
- Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)
  Hazardous substance
- Safe Drinking Water Act (SDWA)
  Not regulated.
- Food and Drug Administration (FDA)
  Total food additive
  Direct food additive
  GRAS food additive

US state regulations
- US. Massachusetts RTK - Substance List
  Potassium hydroxide (CAS 1310-58-3)
- US. New Jersey Worker and Community Right-to-Know Act
  Potassium hydroxide (CAS 1310-58-3)
- US. Pennsylvania Worker and Community Right-to-Know Law
  Potassium hydroxide (CAS 1310-58-3)
- US. Rhode Island RTK
  Potassium hydroxide (CAS 1310-58-3)
- California Proposition 65
  California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories
<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
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<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
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<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
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<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
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</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
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<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
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<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
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<tr>
<td>Taiwan</td>
<td>Taiwan Chemical Substance Inventory (TCSI)</td>
<td>Yes</td>
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<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*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 18-June-2019
Revision date -
Version # 01
HMIS® ratings

Health: 3
Flammability: 0
Physical hazard: 4

Disclaimer

This product is subject to Greenfield Global USA Inc.'s terms and conditions, which can be found at http://www.greenfield.com/tc-po-us/. Greenfield cannot anticipate all conditions under which this information and this product, or the products of other manufacturers in combination with this product, may be used. The user is responsible for the proper and safe use, handling, storage and disposal of the product, and assumes liability for any loss, injury, damage or expense arising from any failure to do so. The data in this sheet is based on information and experience available at the time of writing.