

1. Identification

| | | |
|---|--|----------------|
| Product identifier | Brandt Plant Start 8-27-2 | |
| Other means of identification | | |
| Product code | 32061 | |
| Recommended use | Agricultural/ Horticultural Use- NPK Fertilizer- Refer to product label. | |
| Recommended restrictions | Refer to product label. | |
| Manufacturer/Importer/Supplier/Distributor information | | |
| Manufacturer | | |
| Company name | Brandt Consolidated, Inc. | |
| Address | 2935 South Koke Mill Road Springfield, IL 62711 United States | |
| Telephone | Corporate Office | 1-217-547-5800 |
| Website | www.brandt.co | |
| E-mail | msds@brandt.co | |
| Contact person | EH&S / Regulatory Department | |
| Emergency phone number | CHEMTREC (24 hours): USA, Canada, Puerto Rico 1-800-424-9300 Virgin Islands 1-800-424-9300 International Maritime +1 (703) 527-3887 | |

2. Hazard(s) identification

| | | |
|-----------------------|-----------------------------------|-------------|
| Physical hazards | Not classified. | |
| Health hazards | Skin corrosion/irritation | Category 1A |
| | Serious eye damage/eye irritation | Category 1 |
| Environmental hazards | Not classified. | |
| OSHA defined hazards | Not classified. | |
| Label elements | | |



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|--|---|
| Signal word | Danger |
| Hazard statement | Causes severe skin burns and eye damage. Causes serious eye damage. |
| Precautionary statement | |
| Prevention | Do not breathe mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. |
| 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. 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. Specific treatment (see this label). Wash contaminated clothing before reuse. |
| Storage | Store locked up. |
| 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

Mixtures

| Chemical name | Common name and synonyms | CAS number | % |
|--|--------------------------|------------|----------|
| Potassium Hydroxide (Caustic Potash) | | 1310-58-3 | 1 - < 3* |
| Other components below reportable levels | | | 90 - 100 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

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| Inhalation | Move to fresh air. Call a physician if symptoms develop or persist. |
| Skin contact | Take off immediately all contaminated clothing. Wash off with soap and water. 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 | Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Burning pain and severe corrosive skin damage. Severe eye irritation. Permanent eye damage including blindness could result. |
| 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 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. |

5. Fire-fighting measures

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| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). |
| Unsuitable extinguishing media | Do not use water jet as an extinguisher, as this will spread the fire. |
| Specific hazards arising from the chemical | During fire, gases hazardous to health may be formed. |
| 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. |
| General fire hazards | No unusual fire or explosion hazards noted. |

6. Accidental release measures

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| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. 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 | Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. 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. Never return spills to original containers for re-use. Prevent entry into waterways, sewer, basements or confined areas. For waste disposal, see section 13 of the SDS. |
| Environmental precautions | Avoid discharge into drains, water courses or onto the ground. |

7. Handling and storage

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| Precautions for safe handling | Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. |
| Conditions for safe storage, including any incompatibilities | Store locked up. Store in original tightly closed container. Keep container tightly closed. Store away from incompatible materials (see Section 10 of the SDS). |

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

| Components | Type | Value |
|--|---------|---------|
| Potassium Hydroxide (Caustic Potash) (CAS 1310-58-3) | Ceiling | 2 mg/m3 |

US. NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value |
|--|------|---------|
| Potassium Hydroxide (Caustic Potash) (CAS 1310-58-3) | TWA | 2 mg/m3 |

Biological limit values

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

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) 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 safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Respiratory protection not required.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

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

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| Appearance | Liquid. |
| Physical state | Liquid. |
| Form | Liquid. |
| Color | Green to. Brown. |
| Odor | Slight. |
| Odor threshold | Not available. |
| pH | 6 - 7 |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | > 212 °F (> 100 °C) |
| Flash point | Not available. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not available. |
| 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 | 0.00001 hPa estimated |
| Vapor density | Not available. |
| Relative density | 1.37 - 1.43 g/cm3 |

| | |
|--|----------------------|
| Solubility(ies) | |
| Solubility (water) | 100 % |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Other information | |
| Density | 1.37 - 1.43 g/cm3 |
| Percent volatile | 43.21 % estimated |
| pH in aqueous solution | 6 - 7 (10% Solution) |
| Pounds per gallon | 11.4 - 11.9 lb/gal |
| Shelf life | 2 years (typical) |
| Specific gravity | 1.37 - 1.43 |

10. Stability and reactivity

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| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | Contact with incompatible materials. |
| Incompatible materials | Strong oxidizing agents. |
| Hazardous decomposition products | No hazardous decomposition products are known. |

11. Toxicological information

Information on likely routes of exposure

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|---|--|
| Inhalation | Prolonged inhalation may be harmful. May cause irritation to the respiratory system. |
| Skin contact | Causes severe skin burns. |
| Eye contact | Causes serious eye damage. |
| Ingestion | Causes digestive tract burns. |
| Symptoms related to the physical, chemical and toxicological characteristics | Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Severe eye irritation. Permanent eye damage including blindness could result. |

Information on toxicological effects

Acute toxicity

| Product | Species | Test Results |
|--|---------|-----------------------|
| Brandt Plant Start 8-27-2 | | |
| <u>Acute</u> | | |
| Oral | | |
| LD50 | Rat | 10078 mg/kg estimated |
| Components | Species | Test Results |
| Potassium Hydroxide (Caustic Potash) (CAS 1310-58-3) | | |
| <u>Acute</u> | | |
| Oral | | |
| LD50 | Rat | 273 mg/kg |

* Estimates for product may be based on additional component data not shown.

| | |
|--|--|
| 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 available.

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

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

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 available.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

| Product | | Species | Test Results |
|--|------|---|------------------------------------|
| Brandt Plant Start 8-27-2 | | | |
| Aquatic | | | |
| Crustacea | EC50 | Daphnia | 1375.6523 mg/l, 48 hours estimated |
| Fish | LC50 | Fish | 1555.0975 mg/l, 96 hours estimated |
| Components | | Species | Test Results |
| Potassium Hydroxide (Caustic Potash) (CAS 1310-58-3) | | | |
| Aquatic | | | |
| Fish | LC50 | Western mosquitofish (Gambusia affinis) | 80 mg/l, 96 hours |

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential Not available.

Mobility in soil No data available.

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.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. 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 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 Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

| | |
|------------------------------|---|
| UN number | UN1760 |
| UN proper shipping name | Corrosive liquids, n.o.s. (Potassium Hydroxide (Caustic Potash)) |
| Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| Label(s) | 8 |
| Packing group | III |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Special provisions | A6, A7, B10, T14, TP2, TP27 |
| Packaging exceptions | None |
| Packaging non bulk | 201 |
| Packaging bulk | 243 |

IATA

| | |
|------------------------------|---|
| UN number | UN1760 |
| UN proper shipping name | Corrosive liquids, n.o.s. (Potassium Hydroxide (Caustic Potash)) |
| Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| Label(s) | 8 |
| Packing group | III |
| Environmental hazards | No. |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |

IMDG

| | |
|------------------------------|---|
| UN number | UN1760 |
| UN proper shipping name | Corrosive liquids, n.o.s. (Potassium Hydroxide (Caustic Potash)) |
| Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| Label(s) | 8 |
| Packing group | III |
| Environmental hazards | |
| Marine pollutant | No. |
| EmS | Not available. |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |

DOT



IATA; IMDG



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 (Caustic Potash) (CAS 1310-58-3) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

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.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

Potassium Hydroxide (Caustic Potash) (CAS 1310-58-3)

US. New Jersey Worker and Community Right-to-Know Act

Potassium Hydroxide (Caustic Potash) (CAS 1310-58-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Potassium Hydroxide (Caustic Potash) (CAS 1310-58-3)

US. Rhode Island RTK

Potassium Hydroxide (Caustic Potash) (CAS 1310-58-3)

US. California Proposition 65

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

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|----------------------|--|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | No |
| Canada | Domestic Substances List (DSL) | No |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | No |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | No |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| Korea | Existing Chemicals List (ECL) | No |

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|---|------------------------|
| New Zealand | New Zealand Inventory | No |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | No |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | No |

*A "Yes" indicates that all components of this product comply 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 | 03-25-2014 |
| Revision date | 05-25-2016 |
| Version # | 03 |
| Disclaimer | The information provided in this Safety Data Sheet is correct to the best of Manufacturer's knowledge, information and belief at the date of its publication; however, it is provided only as a guidance for safe handling, use, processing, storage, transportation, disposal and release of the Product. No warranties of any kind, either expressed or implied, including warranties of merchantability or fitness for a particular purpose, are made with respect to the Product or the information provided herein, or that the Product or information herein may be used without infringing the intellectual property rights of others. The information provided in this Safety Data Sheet relates only to the specific Product designated and may not be valid if the Product is used in combination with other materials or in any other process, unless specified herein. The user assumes all risk and liability for loss, injury, damage or expense due to any use, handling, storage or disposal of the Product, and Manufacturer recommends that the user conducts its owns tests of the Product to determine suitability of the Product for user's particular use. |
| Revision information | This document has undergone significant changes and should be reviewed in its entirety. |