DUDA ENERGY, LLC

Safety Data Sheet
DRY CAUSTIC POTASH

SECTION 1: Identification

1.1 Product identifier

Product name	DRY CAUSTIC POTASH
Substance name	POTASSIUM HYDROXIDE
EC no.	215-181-3
CAS no.	1310-58-3
Index no.	019-002-00-8

1.3 Recommended use of the chemical and restrictions on use

Manufacture of liquid soap; mordant for wood; absorbing carbon dioxide; mercerizing cotton; bleaching; manufacture of potassium carbonate and tetrapotassium pyrophosphate; electrolyte in storage batteries and some fuel cells; absorbing hydrogen sulfide; dyestuffs; liquid fertilizers; food additive; herbicides; electroplating; reagent; paint and varnish removers; photoengraving and lithography; printing inks; in analytical chemistry and organic synthesis; in medicine as a pharmaceutic acid (alkalizing agent); in veterinary medicine as a caustic used in disbudding calves horns and in aqueous solution to dissolve scales and hair in skin scrapings; manufacture of cleansers; in wart removal and as a 2.5% solution in glycerol as a cuticle solvent. This type of compound is also used in washing powders, some denture cleaners, some non-phosphate "ecology" detergents and drain-pipe cleaners.
*COMMENTS: Not available

1.4 Supplier's details

Name	Duda Energy, LLC
Address	1112 Brooks St Decatur, AL 35601 USA
Telephone	256.340.4866

1.5 Emergency phone number(s)

800.255.3924 MIS: 0006555 Chemtel

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS classification in accordance with: (US) OSHA (29 CFR 1910.1200)
- Corrosive to metals (chapter 2.16), Cat. 1
- Acute toxicity, oral (chapter 3.1), Cat. 4
- Skin corrosion/irritation (chapter 3.2), Cat. 1A

- Eye damage/irritation (chapter 3.3), Cat. 1
- Hazardous to the aquatic environment - acute hazard (chapter 4.1), Cat. 3

2.2 GHS label elements, including precautionary statements

Pictogram

Hazard statement(s)

H290	May be corrosive to metals
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H402	Harmful to aquatic life

Precautionary statement(s)

P234	Keep only in original container.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash … thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell,
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/...
P321	Specific treatment (see … on this label).
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P405	Store locked up.
P406	Store in a corrosive resistant/… container with a resistant inner liner.
P501	Dispose of contents/container to …

2.3 Other hazards which do not result in classification

None

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name	POTASSIUM HYDROXIDE
EC no.	215-181-3
CAS no.	1310-58-3
Index no.	019-002-00-8
Formula	KOH
Molecular weight	56.11
Other names / synonyms	Potassium hydroxide (K(OH)); koh; UN 1813; CAUSTIC POTASH; POTASSIUM HYDROXIDE

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled	If inhalation of dust occurs and adverse effects result, remove to uncontaminated area. Treat symptomatically. Get medical attention IMMEDIATELY.
In case of skin contact	Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry, and shoes. Wash contaminated areas with large amounts of water. GET MEDICAL ATTENTION IMMEDIATELY. Thoroughly clean and dry contaminated clothing before reuse.
In case of eye contact	Immediately flush contaminated eyes with a directed stream of water for as long as possible. Remove contact lenses, if present, then continue rinsing. GET MEDICAL ATTENTION IMMEDIATELY.
If swallowed	DO NOT INDUCE VOMITING. For definite or probable ingestion, do not administer fluids orally. If vomiting occurs spontaneously, keep airway clear. Monitor airway. Volume resuscitation (IV fluids) and circulatory support (CPR) may be required. Never give anything by mouth to an unconscious or convulsive person. GET MEDICAL ATTENTION IMMEDIATELY.
Personal protective equipment for first-aid responders	First responders should be made aware of the risk of exposure to material and advised to wear applicable PPE.

4.2 Most important symptoms/effects, acute and delayed

Corrosive; this material may be corrosive to any tissue with which it comes into contact. It can cause serious burns and extensive tissue destruction resulting in liquefaction, necrosis, and/or perforation.
Delayed effects: Repeated or prolonged exposures that cause irritation to skin may cause chronic dermatitis.

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

Inhalation: Exposure to airborne material may cause irritation, redness of upper and lower airways, coughing, laryngeal spasm and edema, shortness of breath, bronchio-constriction, and possible pulmonary edema. Severe and permanent scarring may occur. Aspiration of this material may cause the same conditions.

Skin: When skin is exposed to solid product with moisture it may cause redness, itching, irritation, swelling, burns (first, second, or third degree), liquefaction of skin, and damage to underlying tissues (deep, painful wounds).

Eye: Eye exposures may cause eye lid burns, conjunctivitis, corneal edema, corneal burn, corneal perforation, damage to internal contents of the eye of the eye, permanent visual defects, and blindness and/or loss of the eye.

Ingestion: Exposure by ingestion may cause irritation, swelling, and perforation of upper and lower gastrointestinal tissues. Permanent scarring may occur.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use exstinguishing methods appropriate to surrounding fire. Use water spray to keep containers cool. Avoid direct contact of this product with water as this can cause an exothermic reaction.

5.2 Specific hazards arising from the chemical

Non-combustible - substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. May react with chemically reactive metals such as aluminum, zinc, magnesium, copper, etc. to release hydrogen gas which can form explosive mixtures in air.

5.3 Special protective actions for fire-fighters
Move container from fire area if it can be done without risk. Cool containers with water. Wear NIOSH approved positive-pressure SCBA operated in pressure demand mode. Avoid contact with skin and eyes. Avoid inhalation of material or combustion by-products.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Avoid contact with skin, eyes and clothing. Do not breathe vapors, fumes or mist. Wear appropriate PPE.

6.2 Environmental precautions
Keep out of water supplies and sewers. This material is alkaline and may raise the pH of surface waters with low buffering capacity. Releases should be reported, if required, to appropriate agencies.

6.3 Methods and materials for containment and cleaning up
Shovel dry material into suitable container. Recycle or dispose according to regulations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid breathing dust. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. When mixing, slowly add water to minimize heat generation and spattering.

7.2 Conditions for safe storage, including any incompatibilities
Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labelled. Store in a cool, dry, well ventilated area. Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated. Keep separated from incompatible substances.

Incompatabilities/Materials to avoid:
Acids, halogenated compounds, and prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc, or other alkali sensitive metals or allows, water (H2O).

Specific end use(s)
See Section 1

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. POTASSIUM HYDROXIDE (CAS: 1310-58-3 EC: 215-181-3)
TLV®: 2 mg/mg3 (ACGIH)

2. POTASSIUM HYDROXIDE (CAS: 1310-58-3 EC: 215-181-3)
TLV®: 2 mg/mg3 (NIOSH)

3. POTASSIUM HYDROXIDE (CAS: 1310-58-3 EC: 215-181-3)
TLV®: 2 mg/mg3 (OSHA)

8.2 Appropriate engineering controls
Provide local exhaust ventilation where dust or mist may be generated. Ensure compliance with applicable exposure limits.
Provide an emergency eye wash foundtain and quick drench shower in the immediate work area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
Wear chemical safety goggles with a face-shield to protect against eye and skin contact when appropriate.

Skin protection
Wear protective clothing to minimize skin contact. When potential for contact with wet materials exist, wear Tychem or similar chemical protective suit. When potential for contact with dry material exists, wear disposable coveralls suitable for dust exposure, such as Tyvek. Always place pants legs over boots. Thoroughly clean and dry contaminated clothing before reuse.
Wear chemical protective gloves, Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

Respiratory protection
A NIOSH approved respirator with N95 dust/mist filter (half-face) or N100 dust/mist filter (full-face) cartridges may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits or when symptoms have been observed that are indicative of overexposure. Where eye irritation risk is expected, a full-face respirator system is required.

Environmental exposure controls
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)	Solid
Odor	None
Odor threshold	N/A
pH	13.5 (0.1M aqueous solution)
Melting point/freezing point	~360°C
Initial boiling point and boiling range	1320°C
Flash point	No data
Evaporation rate	No data
Flammability (solid, gas)	No data
Upper/lower flammability limits	No data
Upper/lower explosive limits	No data
Vapor pressure	1 hPa (1 mmHg) at 719°C (1326°F) 1 hPa (1 mmHg) at 714°C (1317°F)
Vapor density	No data
Relative density	2.044
Solubility(ies)	Water: 1120 g/l
Partition coefficient: n-octanol/water	No data
Auto-ignition temperature	No data
Decomposition temperature	No data
Viscosity	No data
Explosive properties	No data
Oxidizing properties	No data

SECTION 10: Stability and reactivity

10.1 Reactivity
Soluble in water, releasing heat sufficient to ignite combustibles. Reacts with acids, giving off heat.

10.2 Chemical stability
Stable under normal storage conditions.

10.3 Possibility of hazardous reactions
Mixing with water, acid, or incompatible materials may cause splattering and release of large amounts of heat. When moist, reacts with some metals forming flammable hydrogen gas. Carbon monoxide gas may form upon contact with reducing sugars, food, and beverage products in enclosed spaces.

10.4 Conditions to avoid
Interaction with incompatible materials.

10.5 Incompatible materials
Acids, halogenated compounds, and prolonged contact with aluminum, brass, copper, bronze, lead, tin, zinc, or other alkali sensitive metals or allows, water (H2O).

10.6 Hazardous decomposition products
None known.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
[Potassium Hydroxide - CAS 1310-58-3]
LD50
Oral - RAT: 284 mg/kg

Skin corrosion/irritation
Corrosive - Causes severe skin burns. Prolonged or repeat skin exposure can result in chronic dermatitis.

Serious eye damage/irritation
Corrosive - Causes serious eye damage which can result in: severe irritation, pain and burns, permanent damage (including blindness).

Respiratory or skin sensitization
No data

Germ cell mutagenicity
No data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

STOT-single exposure
Respiratory System, Gastrointestinal System

STOT-repeated exposure
No data available

Aspiration hazard

No data available

SECTION 12: Ecological information

Toxicity
This material is alkaline and may raise the pH of surface waters with low buffering capacity. This material has exhibited moderate toxicity to aquatic organisms.

LC50
Mosquito Fish - 80 mg/L, 96 hr
Fathead Minnow - 179 mg/L, 96 hr

EC50
Daphnia magna - 60 mg/L 48 hr

Persistence and degradability
This material is believed to exist in the disassociated state in the environment.

Bioaccumulative potential
Potassium hydroxide is a strong alkaline substance that dissociates completely in water to K+ and OH-. Considering its high water solubility, potassium hydroxide is not expected to bioconcentrate in organisms. Log Pow is not applicable for an inorganic compound that dissociates.

Mobility in soil
Not expected to be absorbed into soil.

Other adverse effects
This material has exhibited slight toxicity to terrestrial organisms.

SECTION 13: Disposal considerations

Disposal of the product
Dispose in accordance with all applicable laws and regulations.

Disposal of contaminated packaging
Handle contaminated packaging according to label warnings. Even empty containers still pose an exposure risk.

Waste treatment
Reuse or reprocess, if possible. Dispose in accordance with all applicable laws and regulations.

Sewage disposal
Do not dispose into sewer or water-ways.

SECTION 14: Transport information

DOT (US)
UN Number: UN1813
Class: 8
Packing Group: II
Proper Shipping Name: Potassium hydroxide, solid

IMDG
UN Number: UN1813
Class: 8
Packing Group: II

Shipping name: Potassium hydroxide, solid
EMS-No: F-A, S-B

IATA
UN number: 1813
Class: 8
Packing group: II
Proper shipping name: Potassium hydroxide, solid

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Pennsylvania Right To Know Components
Chemical name: Potassium hydroxide
CAS number: 1310-58-3

New Jersey Right To Know Components
Common name: POTASSIUM HYDROXIDE
CAS number: 1310-58-3

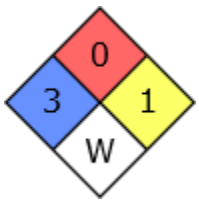
Massachusetts Right To Know Components
Chemical name: Potassium hydroxide
CAS number: 1310-58-3

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Hazards
Acute Health Hazard

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

NFPA Rating



SECTION 16: Other information

Revision history:
Version 2.1
Revision 1
Supersedes 1.0
Issued on 5/9/2017

16.1 Further information/disclaimer
The information provided in this Safety Data Sheet is correct to the best of Duda Energy LLC's knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This Safety

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