SAFETY DATA SHEET

POTASSIUM BICARBONATE (ANHYDROUS ALL GRADES)

SDS Revision Date: 09-Aug-2018

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification: Level 7 Chemical, Inc.
253 Sturgis Rd
Conway, AR 72034
1-855-927-1777

Emergency Telephone Number:
CHEMTREC 1-800-424-9300

Product Identifier:	**POTASSIUM BICARBONATE (ANHYDROUS ALL GRADES)**
Trade Name:	Potassium Bicarbonate USP; ACS and Technical Grades; Potassium Bicarbonate Food Grade
Synonyms:	Carbonic acid, monopotassium salt; KBC; Pot bicarb; Potassium acid carbonate; Anhydrous potassium bicarbonate; Potassium hydrogen carbonate
Product Use:	Potassium bicarbonate is used as an agriculture soil treatment, anti-scaling agent, catalyst, adsorbent and absorbent, anti-freezing agent, binding agent, cement additive, cosmetic products (hair and skin care), corrosion inhibitor, de-icer, detergent builder (washing powder and dishwasher tabs), flame retardant (fire extinguisher ingredient), food additive (baking agent, color preservative, nutrient supplement, processing aid), feedstuff additive, fertilizers, foaming / blowing agent (high-temperature polymer blowing agent, raising agent), filler, fixing agent, flotation agent, impregnation agent (for paper or cellulose), laboratory chemical, leavening agent, chemical intermediate, odor agent, oil drilling, pH regulating agent (e.g. buffer), pharmaceutical substance (processing aid and preparations), photo-chemical, plant protection agent, reagent in chemical synthesis, separating agent, tanning agent (for leather), used in aqueous coatings and adhesives, washing and cleaning products, water treatment, polymer compounds, toners paints and inks

Uses Advised Against: None identified

SECTION 2. HAZARDS IDENTIFICATION

OSHA REGULATORY STATUS: This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

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EMERGENCY OVERVIEW:

Color: White
Physical State: Solid
Appearance: Granular, Powder
Odor: Odorless

Signal Word: **Non-hazardous**

MAJOR HEALTH HAZARDS: MAY CAUSE IRRITATION TO EYES, SKIN AND RESPIRATORY TRACT.

PRECAUTIONARY STATEMENTS: Call a POISON CENTER OF LICENSED HEALTH CARE PROVIDER if you feel unwell.

ADDITIONAL HAZARD INFORMATION: Good hygiene and safety practices should be used when handling and working with this material. Good hygiene practices include but are not limited to: wearing suitable gloves and/or eye protection; washing hands and affected skin immediately after handling, before breaks, and at the end of the workday; regularly cleaning work area and clothing; etc.

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HAZARD CLASSIFICATION:

Note: This material is not classified as hazardous according to OSHA HAZCOM 2012 (29 CFR 1910.1200). This material is not classified as hazardous according to WHMIS 2015 as updated by the Hazardous Product Act (HPA) and the Hazardous Products Regulations (HPR).

Hazards Not Otherwise Classified (HNOC) - GHS
None Known

GHS SYMBOL: None

GHS SIGNAL WORD: **No signal word**

GHS HAZARD STATEMENTS:

GHS - Precautionary Statement(s) - Prevention

• There are no Precautionary Statement(s)-Prevention phrases assigned

GHS - Precautionary Statement(s) - Response
• There are no Precautionary Statement(s)-Response phrases assigned

GHS - Precautionary Statement(s) - Storage
• There are no Precautionary-Storage phrases assigned

GHS - Precautionary Statement(s) - Disposal
• There are no Precautionary Statement(s) - Disposal phrases assigned

See Section 11: TOXICOLOGICAL INFORMATION

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Percent [%]	CAS Number
Potassium Bicarbonate	97.5-100	298-14-6
Potassium Carbonate	<2.5	584-08-7

SECTION 4. FIRST AID MEASURES

INHALATION: IF INHALED: Call a POISON CENTER or doctor if you feel unwell.

SKIN CONTACT: If skin irritation persists, get medical advice/attention.

EYE CONTACT: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

INGESTION: Call a POISON CENTER or doctor/physician if you feel unwell.

Most Important Symptoms/Effects (Acute and Delayed):

Acute Symptoms/Effects:

Inhalation (Breathing): Respiratory Irritation: Upper airway irritation, may cause cough, redness of mouth and upper airways.
Skin: Skin Irritation: Exposure to skin may cause redness, or irritation. This material when applied to the skin of guinea pigs did not elicit any dermal sensitization reaction.
Eye: Eye Irritation: Eye exposure may cause irritation, and redness to the eye lids, conjunctiva.
Ingestion (Swallowing): No effects identified.

Delayed Symptoms/Effects:

- No delayed / chronic effects have been identified

Interaction with Other Chemicals Which Enhance Toxicity: None known.

Protection of First-Aiders: Avoid contact with skin and eyes. Do not breathe dust.

Notes to Physician: This material dissociated into potassium and bicarbonate ions upon contact with water.

SECTION 5. FIRE-FIGHTING MEASURES

Fire Hazard: Negligible fire hazard.

Extinguishing Media: Use extinguishing agents appropriate for surrounding fire

Fire Fighting: Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

Hazardous Combustion Products: Oxides of carbon, Potassium oxides, Heating above 100 °C may cause dangerous levels of carbon dioxide gas to be present in the atmosphere

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Not sensitive.

Lower Flammability Level (air): Not flammable

Upper Flammability Level (air): Not flammable

Flash point: Not flammable

Auto-ignition Temperature: Not applicable

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Avoid breathing dust. Avoid contact with skin and eyes. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Wear appropriate personal protective equipment recommended in Section 8 of the SDS.

Environmental Precautions:

Keep out of water supplies and sewers. Releases should be reported, if required, to appropriate agencies.

Methods and Materials for Containment and Cleaning Up:

Shovel dry material into suitable container. Flush spill area with water, if appropriate.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling:
Avoid breathing dust. Wash thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice. When using, do not eat, drink or smoke. Do not reuse containers. Wear personal protective equipment as described in Exposure Controls/Personal Protection (Section 8) of the SDS.

Safe Storage Conditions:
Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Material is very hygroscopic. Store in a cool, dry area. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet).

Incompatibilities/ Materials to Avoid:
Lime, Acids, Prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

REGULATORY EXPOSURE LIMIT(S):
This product would be regulated as a nuisance dust.

OEL: Occupational Exposure Limit; OSHA: United States Occupational Safety and Health Administration; PEL: Permissible Exposure Limit; TWA: Time Weighted Average; STEL: Short Term Exposure Limit

NON-REGULATORY EXPOSURE LIMIT(S):
Listed below are the product components that have advisory (non-regulatory) occupational exposure limits (OEL's) established.
- The Non-Regulatory United States Occupational Safety and Health Administration (OSHA) limits, if shown, are the Vacated 1989 PEL's (vacated by 58 FR 35338, June 30, 1993).

- The American Conference of Governmental Industrial Hygienists (ACGIH) is a voluntary organization of professional industrial hygiene personnel in government or educational institutions in the United States. The ACGIH develops and publishes recommended occupational exposure limits each year called Threshold Limit Values (TLVs) for hundreds of chemicals, physical agents, and biological exposure indices.

ENGINEERING CONTROLS: Provide local exhaust ventilation where dust or mist may be generated. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Wear safety glasses with side-shields. If eye contact is likely, wear chemical resistant safety goggles.

Skin and Body Protection: When potential for contact with dry material exists, wear disposable coveralls suitable for dust exposure, such as Tyvek®. When potential for contact with wet material exists, wear Tychem® or similar chemical protective suit. Contaminated clothing should be removed and laundered before reuse.

Hand Protection: Wear appropriate chemical resistant gloves. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

Protective Material Types:
Neoprene, Nitrile, Butyl rubber, Natural rubber

Respiratory Protection: A NIOSH approved respirator with high efficiency particulate air (HEPA) 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. When an air purifying respirator is not adequate for spills and/or emergencies of unknown concentrations, an approved self-contained breathing apparatus operated in the pressure demand mode is required. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Appearance:	Granular, Powder
Color:	White
Odor:	Odorless
Odor Threshold [ppm]:	No data available. No odor warning properties.
Molecular Weight:	100.12
Molecular Formula:	KHCO3
Decomposition Temperature:	212 - 392 °F (100 - 200 °C)
Boiling Point/Range:	Not applicable
Freezing Point/Range:	Not applicable.
Melting Point/Range:	212 - 392 °F (100 - 200 °C) (decomposes)
Vapor Pressure:	Not applicable
Density:	68 lbs/ft3
Relative Density:	2.17 g/cm3 @ 20°C
Water Solubility:	23% @ 20 °C; 362 g/L @ 25°C
pH:	slightly basic in solution; pH 8.2 for 1% solution at 25°C
Evaporation Rate (ether=1):	Not applicable
Partition Coefficient (n-octanol/water):	No data available
Flash point:	Not flammable
Flammability (solid, gas):	Not flammable
Lower Flammability Level (air):	Not flammable
Upper Flammability Level (air):	Not flammable
Auto-ignition Temperature:	Not applicable
Viscosity:	Not applicable to solids
Hygroscopic:	Yes

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability: Stable at normal temperatures and pressures.

Reactivity: Not reactive under normal temperatures and pressures.

Possibility of Hazardous Reactions: Temperatures above 100 °C (212 °F). Avoid contact with lime to prevent formation of corrosive potassium hydroxide (KOH).

Conditions to Avoid:
• None known

Incompatibilities/ Materials to Avoid: Lime; Acids; Prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys

Hazardous Decomposition Products: Potassium oxides, Oxides of Carbon, Heating above 100 °C may cause dangerous levels of carbon dioxide gas to be present in the atmosphere

Hazardous Polymerization: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

TOXICITY DATA:

PRODUCT TOXICITY DATA: POTASSIUM BICARBONATE

LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
2825 mg/kg oral-rat LD50	>2000 gm/kg skin-rabbit LD50	> 4.88 mg/L (4.5 hr - Rat)

COMPONENT TOXICITY DATA: The data are from public databases sources.

Component	LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
Potassium Carbonate 584-08-7	1870 mg/kg (Rat)	No information available	No information available

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POTENTIAL HEALTH EFFECTS:

Eye contact: May cause temporary mild irritation.

Skin contact: Substance does not generally irritate and is only mildly irritating to the skin.

Inhalation: May cause respiratory tract irritation.

Ingestion: No known effects. After ingestion, potassium bicarbonate rapidly dissociates in the gastric juice to yield carbonate ions (HCO3- and CO32-) and potassium ions (K+), and at this stage, the minor alkalinity is neutralized by the stomach acid. For this reason undissociated potassium bicarbonate is not expected to be systemically available in the body under normal handling and use conditions and the systemic action of potassium bicarbonate must be discussed for its dissociation products, carbonate and potassium ions, separately. All ions involved, are naturally occurring essential ions in human beings effectively processed and regulated in

the body by natural physiological mechanism.

Chronic Effects: No chronic effects are known.

SIGNS AND SYMPTOMS OF EXPOSURE:

Inhalation (Breathing): Respiratory Irritation: Upper airway irritation, may cause cough, redness of mouth and upper airways.

Skin: Skin Irritation: Exposure to skin may cause redness, or irritation. This material when applied to the skin of guinea pigs did not elicit any dermal sensitization reaction.

Eye: Eye Irritation: Eye exposure may cause irritation, and redness to the eye lids, conjunctiva.

Ingestion (Swallowing): No effects identified.

ACUTE TOXICITY:
No acute effects expected.

CHRONIC TOXICITY:
No chronic effects are known.

Interaction with Other Chemicals Which Enhance Toxicity: None known.

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GHS HEALTH HAZARDS:

Skin Absorbent / Dermal Route: NO.

RESPIRATORY OR SKIN SENSITIZATION: Reliable, adequate and relevant data from a Buehler study with guinea pigs indicate that potassium bicarbonate does not induce skin sensitization. Further on, based on the structure of potassium bicarbonate, no sensitizing effects are expected.

CARCINOGENICITY COMMENT: There is no evidence for an intrinsic carcinogenicity of potassium bicarbonate relevant to humans obtained from the results of reliable long-term studies. Additional information from assessments carried out within the OECD work on investigation of high production volume chemicals on compounds which have a carbonate or a potassium moiety, also gave no indications on an intrinsic carcinogenic activity of potassium bicarbonate. Moreover, there is no evidence for a clastogenic or mutagenic potential of potassium bicarbonate from reliable studies on closely related read-across substances potassium carbonate or potassium chloride and in addition, based on chemistry considerations on the structure of potassium bicarbonate, no carcinogenicity is expected.

MUTAGENICITY: No studies on genetic toxicity of potassium bicarbonate are available. Reliable studies on in vitro gene mutagenicity in bacteria and in vitro cytogenicity in mammalian cells on closely related read-across substances were negative and gave no indications on an intrinsic genotoxic activity. There is no evidence for a clastogenic or mutagenic potential of potassium bicarbonate relevant to humans obtained from the results of a chromosome aberration study and bacterial mutation assays with read-across substance potassium carbonate and two mammalian cell gene mutation studies from the read-across substance potassium chloride.

REPRODUCTIVE TOXICITY: There is no evidence for an intrinsic toxicity to reproduction of potassium bicarbonate from the results of reliable developmental toxicity and teratogenicity studies on mice and rats performed with the closely related read-across substance potassium carbonate, reliable repeated dose toxicity studies with macroscopic and histological examination of the male and female reproductive organs (epididymides, testes, ovaries, and uterus) performed with potassium bicarbonate itself and available information from assessments carried out within the OECD

work on investigation of high production volume chemicals on compounds which have a carbonate or a potassium moiety. Further on, based on chemistry considerations on the structure of potassium bicarbonate and potassium bicarbonate, no toxicity to reproduction is expected.

IMMUNOTOXICITY: DON'T USE THIS PHRASE!! No relevant information available

NEUROTOXICITY: No relevant information available.

SECTION 12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

Fish Toxicity:
LC50 Bluegill sunfish: 1500 mg/l (96 hr.)Rainbow trout: 1300 mg/l (96 hr.)

Invertebrate Toxicity:
1200 mg/L 48 hour(s) EC50 Daphnia magna (practically nontoxic)
LC50 Ceriodaphnia dubia: 630 mg/L 48h

FATE AND TRANSPORT:

BIODEGRADATION: Potassium bicarbonate dissolves and dissociates immediately into K+ and inorganic carbon species in aquatic ecosystems including soil and sediment pore water. Both potassium and inorganic carbon are ubiquitously present in the environment. Biodegradation is not relevant because potassium bicarbonate is an inorganic substance.

PERSISTENCE: This material is believed not to persist in the environment.

BIOCONCENTRATION: This material is believed not to bioaccumulate.

BIOACCUMULATIVE POTENTIAL: Potassium bicarbonate is very soluble in water. Therefore, the substance does not accumulate in lipophilic tissues of living organisms. In aquatic and terrestrial ecosystems, potassium bicarbonate will rapidly dissociate to potassium cation and inorganic carbon species. These are naturally-occurring ions in the environment. In animal and plant organisms, the mass balance of carbonate and potassium will be regulated by physiological mechanisms to ensure appropriate cell concentrations for natural life processes.

MOBILITY IN SOIL: Due to the ionic character and the high water solubility of potassium bicarbonate, no sorption onto soil and sediment organic matter occurs.

ADDITIONAL ECOLOGICAL INFORMATION: No information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from material:

Reuse or reprocess, if possible. Dispose in accordance with all applicable regulations.

Container Management:
Dispose of container in accordance with applicable local, regional, national, and/or international regulations. Container rinsate must be disposed of in compliance with applicable regulations.

SECTION 14. TRANSPORT INFORMATION

LAND TRANSPORT

U.S. DOT 49 CFR 172.101:
Status: Not Regulated

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
Status: Not Regulated

MARITIME TRANSPORT (IMO / IMDG)

Status - IMO / IMDG: Not Regulated

SECTION 15. REGULATORY INFORMATION

U.S. REGULATIONS

OSHA REGULATORY STATUS:
This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):
Not regulated.

SARA EHS Chemical (40 CFR 355.30)
Not regulated

EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):
None

SARA HAZARD CATEGORIES ALIGNED WITH GHS (2018):
Non-hazardous

EPCRA SECTION 313 (40 CFR 372.65):
Not regulated

OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):
Not regulated

FDA: This material has Generally Recognized As Safe (GRAS) status under specific U.S. Food and Drug Administration (FDA) regulations. Additional information is available from the Code of Federal Regulations which is accessible on the FDA's website. Only food grade product is guaranteed to be produced under all current Good Manufacturing Practices (cGMP) requirements as defined by the FDA. Food grade product is produced in a facility that is accredited as a Safe Quality Food (SQF) Level 2 Facility, certified under the Global Food Safety Initiative (GFSI), and meets the Food Chemical Codex (FCC) requirements.

EPA'S CLEAN WATER AND CLEAN AIR ACTS:
Component(s) not listed on impacted regulatory lists.

NATIONAL INVENTORY STATUS

U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA): All components are listed or exempt.

Component	TSCA Inventory	TSCA ACTIVE LIST	TSCA 12(b)	TSCA - Section 4	TSCA - Section 5	TSCA - Section 6	TSCA - Section 8
Potassium Bicarbonate 298-14-6 (97.5 - 100 %)	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Not listed
Potassium Carbonate 584-08-7 (< 2.5 %)	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Not listed

TSCA 12(b):
• This product is not subject to export notification

CANADIAN CHEMICAL INVENTORY: All components of this product are listed on either the DSL or the NDSL.

Component	DSL	NDSL
Potassium Bicarbonate 298-14-6 (97.5 - 100)	Listed	Not Listed
Potassium Carbonate 584-08-7 (< 2.5)	Listed	Not Listed

STATE REGULATIONS

There are no applicable state regulations for this product or its components.

CANADIAN REGULATIONS

• All components of this product are listed on either the DSL or the NDSL

Component	Canada - CEPA - Schedule I - List of Toxic Substances	Canada - NPRI	Canada - CEPA - 2010 Greenhouse Gases (GHG) Subject to Mandatory Reporting	CANADIAN CHEMICAL INVENTORY:	NDSL:
Potassium Bicarbonate 298-14-6 (97.5 - 100)	Not listed	Not Listed	Not Listed	Listed	Not Listed
Potassium Carbonate 584-08-7 (< 2.5)	Not listed	Not Listed	Not Listed	Listed	Not Listed

WHMIS - Classifications of Substances:
• Not Regulated

SECTION 16. OTHER INFORMATION

Rev. Date: 09-Aug-2018

Reason for Revision:
• Trade Name has been added: SEE SECTION 1
• Updated Product Use information: SEE SECTION 1
• The Emergency Overview Signal word has been added or changed. SEE SECTION 2
• Emergency Overview was revised: SEE SECTION 2
• Changed the GHS classification: SEE SECTION 2
• Revised GHS Information: SEE SECTION 2
• Updated First Aid Measures: SEE SECTION 4
• EXPOSURE CONTROLS/PERSONAL PROTECTION (SECTION 8)
• PHYSICAL AND CHEMICAL PROPERTIES (SECTION 9)
• TOXICOLOGICAL INFORMATION (SECTION 11)
• ECOLOGICAL INFORMATION (SECTION 12)
• Updated FDA Statement: SEE SECTION 15
• Revised SARA Hazard Categories 311/312 HAZARD CATEGORIES (40 CFR 370.21): SEE SECTION 15
• Added SARA Hazard Categories Aligned with GHS (2018): SEE SECTION 15
• Added LOLI tables such as EPA'S Clean Water / Air Act, TSCA status, DHS, PSM, EPCRA, CERCLA, Federal Canadian: SEE SECTION 15
• WHMIS Rating was revised: SEE SECTION 15

IMPORTANT:
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OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Safety Data Sheet available to your employees.

End of Safety Data Sheet