

Safety Data Sheet (SDS) North American

2 Madison Ave. Larchmont, NY 10538

Distributed By:

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SECTION 1: Identification

Product identifiers:

Product trade name: Kalama* Potassium benzoate FCC

Company product number: POTBENZ

Other means of identification: Benzoic acid potassium salt

Recommended use of the chemical and restrictions on use:

Uses: Additive. Industrial applications. Food and pharmaceutical applications.

Restrictions on use: None identified

Details of the supplier:

Manufacturer/Supplier: Emerald Performance Materials, LLC

2020 Front Street, Suite 100 Cuyahoga Falls, Ohio 44221

United States

Telephone: +001-330-916-6700 FAX: +001-330-916-6734

For further information about this SDS: Email: product.compliance@emeraldmaterials.com

Emergency telephone number: ChemTel (24 hours): USA: 1-800-255-3924; International: +001-813-248-0585.

Alternate: Chemtrec (24 hours): USA: 1-800-424-9300; International:

+001-703-527-3887.

SECTION 2: Hazard(s) identification

Information in accordance with 29 CFR 1910.1200 (Hazcom 2012) in effect on May 25, 2012:

Classification of the chemical in accordance with 29 CFR 1910.1200(d):

Eye Irritation, category 2

Combustible Dust (OSHA Defined)

Label elements in accordance with 29 CFR 1910.1200(f):

Hazard pictogram(s):



Signal word:

Warning

Hazard statements:

H319 Causes serious eye irritation.

USH001 May form combustible dust concentrations in air.

Precautionary statements:

P264 Wash thoroughly after handling.

P280 Wear eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

Notes: No Additional Information

Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Annex III.

Regulations in individual countries/regions may determine which statements are required on the product label. See product label for specifics.

Hazards not otherwise classified: No Additional Information

Information in accordance with 29 CFR 1910.1200 in effect before May 25, 2012:

Potential physical and environmental effects: May form combustible dust concentrations in air.

Potential health effects - Acute health effects: Causes serious eye irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Dust inhalation may cause respiratory irritation. Repeated or prolonged skin contact may cause irritation. Ingestion may cause irritation.

Potential health effects - Chronic health effects: Prolonged or repeated contact may irritate the skin, causing dermatitis.

See Section 11 for toxicological information.

SECTION 3: Composition/information on ingredients

Substance:

CAS-No. Chemical Name
0000582-25-2 Potassium benzoate

Weight%

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits. Exact percentage values for components are proprietary in accordance with 29 CFR 1910.1200(i).

SECTION 4: First-aid measures

Description of first aid measures:

General: If irritation or other symptoms occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.

Eye contact: Immediately flush eyes with plenty of clean water for an extended time, not less than fifteen (15) minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. If eye irritation persists: Get medical advice/attention.

Skin contact: Wash the affected area thoroughly with plenty of soap and water. Get medical attention if symptoms occur.

Inhalation: If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a POISON CENTER or doctor/physician if you feel unwell.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Get medical attention immediately.

Protection of first aid responders: Wear proper personal protective clothing and equipment.

Most important symptoms and effects, both acute and delayed: Coughing, Irritation. Preexisting sensitization, skin and/or respiratory disorders or diseases may be aggravated. See section 11 for additional information.

Indication of any immediate medical attention and special treatment needed, if necessary: Treat symptomatically.

SECTION 5: Fire-fighting measures

NFPA flammability class: N/A (Combustible solid)

Extinguishing media:

Suitable: Use water spray, dry chemical, or foam. Carbon dioxide may be ineffective on larger fires due to a lack of cooling capacity which may result in reignition.

Unsuitable: Avoid hose streams or any method which will create dust clouds.

Special hazards arising from the chemical:

Unusual fire/explosion hazards: Concentrated dust/air combinations may produce explosive conditions. As with all organic dusts, fine particles suspended in air in critical proportions and in the presence of an ignition source may ignite and/or explode. Dust may be sensitive to ignition by electrostatic discharge, electrical arcs, sparks, welding torches, cigarettes, open flame, or other significant heat sources. As a precaution, implement standard safety measures for handling finely divided organic

powders. See Section 7 for suggested measures.

Hazardous combustion products: Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See section 10 (10.6 Hazardous decomposition products) for additional information.

Special protective equipment and precautions for fire-fighters: Water spray (fog) can be used to absorb heat and to cool and protect surrounding exposed material. Avoid hose streams or any method which will create dust clouds. Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

See section 9 for additional information.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Avoid raising powdered material due to explosion hazard. Use spark-proof and explosion-proof equipment. If inhalation of dust cannot be avoided, wear an approved particulate respirator. Personal Protective Equipment must be worn.

Environmental precautions: Do not flush product into public sewer, water systems or surface waters.

Methods and materials for containment and cleaning up: Contain spill. Wear proper personal protective clothing and equipment. Using care to avoid dust generation, vacuum or sweep into a closed container for reuse or disposal. Use approved industrial vacuum cleaner for removal. Avoid causing dust. Place into labeled, closed container; store in safe location to await disposal. Change contaminated clothing and launder before reuse.

SECTION 7: Handling and storage

Precautions for safe handling: As with any chemical product, use good laboratory/workplace procedures. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Use under well-ventilated conditions. Avoid eye and skin contact. Avoid drinking, tasting, swallowing or ingesting this product. Avoid routine inhalation of dust of any kind. Exercise care when emptying containers, sweeping, mixing or doing other tasks which can create dust. Wash contaminated clothing before reuse. Provide eyewash fountains and safety showers in the work area. As a precaution to control dust explosion potential, implement the following safety measures: Eliminate ignition sources (e.g., sparks, static buildup, excessive heat, etc.). In general, dust of organic materials is a static charge generator which may be ignited by electrostatic discharge, electrical arcs, sparks, welding torches, cigarettes, open flame, or other significant heat sources. Use spark-proof tools and equipment. Bond, ground and properly vent conveyors, dust control devices and other transfer equipment. Prohibit flow of polymer, powder or dust through non-conductive ducts, vacuum hoses or pipes, etc.; only use grounded, electrically conductive transfer lines when pneumatically conveying product. Good housekeeping and controlling of dusts are necessary for safe handling of product. Prevent accumulation of dust (e.g., well-ventilated conditions, promptly vacuuming spills, cleaning overhead horizontal surfaces, etc.). A properly engineered explosion suppression system must be considered. See standards such as the National Fire Protection Association NFPA 654, "Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids"; NFPA 69, "Standard on Explosion Prevention Systems"; NFPA 68, "Standard on Explosion Protection by Deflagration Venting"; NFPA 77, "Recommended Practice on Static Electricity" and other standards as the need

Conditions for safe storage, including any compatibilities: Store cool and dry, under well-ventilated conditions. Store this material away from incompatible substances (see section 10). Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Do not reuse empty container without commercial cleaning or reconditioning. Product will absorb water vapor (hygroscopic).

SECTION 8: Exposure controls / personal protection

Control parameters:

Occupational exposure limits (OEL):

 Chemical Name
 ACGIH - TWA
 ACGIH - STE

 Potassium benzoate
 N/E
 N/E

 Chemical Name
 OSHA - PEL
 OSHA - STEL
 OSHA - Ceiling
 Mexico

 Potassium benzoate
 N/E
 N/E
 N/E
 N/E

Chemical Name OSHA - PEL OSHA - STEL OSHA - Ceiling Mexico

N/E=Not established (no exposure limits established for the listed substances for listed country/region/organization)

Exposure controls:

Appropriate engineering controls: Always provide effective general and, when necessary, local exhaust ventilation to draw dust away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS. Eliminate ignition sources (e.g., sparks, static buildup, excessive heat, etc.). Prohibit flow of powder or dust through non-conductive ducts, vacuum hoses, or pipes, etc. Bond, ground, and properly vent conveyors, dust control devices and other transfer equipment. (Ventilation guidelines/techniques may be found in publications such as Industrial Ventilation: American Conference of Governmental Industrial Hygienists, 1330 Kemper Meadow Drive, Cincinnati, OH, 45240-1634, USA.) (http://www.acgih.org/home.htm).

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

Eye/face protection: Safety glasses or goggles required.

Skin and body protection: Wear protective gloves. Use good laboratory/workplace procedures including personal protective clothing: labcoat, safety glasses and protective gloves.

SECTION 9: Physical and chemical properties

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment. If inhalation of dust cannot be avoided, wear an approved particulate respirator. Use respirator in accordance with manufacturer's use limitations and OSHA standard 1910.134 (29CFR).

Further information: Eyewash fountains and safety showers are recommended in the work area.

Form:	Granules/ powder	pH:	Not Available
Appearance:	White	Relative density:	1.5
Odor:	Odorless	Partition coefficient (n- octanol/water):	1.88 (Benzoic acid)
Odor threshold:	Not Available	% Volatile by weight:	Not Available
Solubility in water:	Appreciable	VOC:	Not Available
Evaporation rate:	Not Available	Boiling point °C:	Not Available
Vapor pressure:	Negligible @ 20 °C	Boiling point °F:	Not Available
Vapor density:	Not Available	Flash point:	Not Applicable
Viscosity:	Not Available	Auto-ignition temperature:	>510 °C (>950 °F)
Melting point/Freezing point:	>300 °C (>572 °F)	Flammability (solid, gas):	Not flammable (may form combustible dust-air mixtures)

Oxidizing properties: Not oxidizing Flammability or explosi limits:

Flammability or explosive LFL/LEL Not Available limits:

UFL/UEL Not Available

Explosive properties: Not explosive

Decomposition temperature: Not Available

Other information: Amounts specified are typical and do not represent a specification.

Dust combustibility data: Particle size variation is considered a critical factor in regards to dust explosion hazard information. Results applicable as follows: sample particle size <75 um, 0.1% moisture content. Sample tested is not typical of product.:

- Minimum ignition energy (dust cloud): 50-100 mJ
- Minimum explosive concentration: 50-60 g/m3

- Maximum rate of pressure rise:
- Maximum pressure of explosion:
581 bars/sec @ 750 g/m3
7.2 bars-gauge @ 500 g/m3

Deflagration Index, Kst (estimate): 158 bar-m/sec
 Volume resistivity (ambient relative humidity): 2.5 x 10(10) ohm-m
 Volume resistivity (low relative humidity): 6.3 x 10(12) ohm-m

Charge decay (ambient relative humidity): 1 second
 Charge decay (low relative humidity): 752 seconds

SECTION 10: Stability and reactivity

Chemical stability: This product is stable.

Possibility of hazardous reactions: Hazardous polymerization will not occur.

Conditions to avoid: Excessive heat and ignition sources. Contact with water or moist air. Avoid static discharge. Avoid dust

formation.

Incompatible materials: Avoid strong acids and oxidizing agents. Avoid contact with iron salts.

Hazardous decomposition products: Carbon dioxide and carbon monoxide.

SECTION 11: Toxicological information

Information on likely routes of exposure:

General: Caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.

Eyes: Causes serious eye irritation.

Skin: Repeated or prolonged skin contact may cause irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Inhalation: Dust inhalation may cause respiratory irritation.

Ingestion: Ingestion may cause irritation.

Symptoms/effects, acute and delayed: Coughing, Irritation

Acute toxicity information: Not classified (based on available data, the classification criteria are not met).

Chemical Name	Inhalation LC50	Species .	Oral LD50	Species .	Dermal LD50	Species .
Potassium benzoate	>12.2 mg/l (no	Rat/ adult	>10000 mg/kg	Rat/ adult	>2000 mg/kg (based	Rabbit/ adult
	mortality, based on				on benzoic acid)	
	honzoic acid)					

Skin corrosion/irritation: Not classified (based on available data, the classification criteria are not met). POTASSIUM BENZOATE: The following is data for sodium benzoate. Skin irritation: Slight to non-irritating.

 Chemical Name
 Skin irritation
 Species

 Potassium benzoate
 Slight irritant
 Similar materials

Serious eye damage/irritation: Causes serious eye irritation (Category 2A). POTASSIUM BENZOATE: The following is data for sodium benzoate. Eye irritation: Moderate irritation.

 Chemical Name
 Eye irritation
 Species

 Potassium benzoate
 Irritant
 Similar materials

Respiratory or skin sensitization: Not classified (based on available data, the classification criteria are not met). READ-ACROSS (BENZOIC ACID): Not a skin sensitizer in the mouse local lymph node assay or Buehler guinea pig test.

 Chemical Name
 Skin sensitisation
 Species

 Potassium benzoate
 Non-sensitizer (read-across)
 Guinea pig and Mouse local lymph node assay

Carcinogenicity: Not classified (based on available data, the classification criteria are not met). READ-ACROSS (SODIUM BENZOATE): In a 2-year animal feeding study (2% in food), sodium benzoate was not carcinogenic.

Carcinogenic status: Not listed or regulated by IARC, NTP, OSHA, or ACGIH.

Germ cell mutagenicity: Not classified (based on available data, the classification criteria are not met). BENZOIC ACID AND BENZOATE SALTS: Studies of benzoic acid and sodium benzoate in the Ames point mutation assay do not show evidence of mutagenicity. However, some studies have been reported to be positive in the less commonly used Bacillus subtilus recombination assay. In a number of cases adverse effects on the chromosome could be noticed, however also negative and/or equivocal results were reported. However many higher-level in vivo tests (clastogenicity inclusive) were negative. Sodium benzoate exhibited no genotoxicity in several in-vivo assays.

Reproductive toxicity: Not classified (based on available data, the classification criteria are not met). BENZOIC ACID AND BENZOATE SALTS: Reproductive toxicity (benzoic acid), 4-generation oral study in rats: NOAEL (no-observed adverse-effect-level) 500 mg/kg bw/day. Developmental toxicity (sodium benzoate), oral, rats and mice: NOAEL of >=175 mg/kg bw/day can be established for developmental effects.

Specific target organ toxicity (STOT) - single exposure: Not classified (based on available data, the classification criteria are not

met).

Specific target organ toxicity (STOT) - repeated exposure: Not classified (based on available data, the classification criteria are not met). POTASSIUM BENZOATE: READ-ACROSS (SODIUM BENZOATE): Repeated dose oral toxicity studies for salts of benzoic acids: NOAEL (no-observed-adverse-effect-level) 1000 mg/kg bw/day. READ-ACROSS (BENZOIC ACID): Repeated dose toxicity study, inhalation: NOAEC (No-Observed-Adverse-Effect-Concentration), inhalation, rat: 250 mg/m3 (systemic effects); 25 mg/m3 (local). Local effects including nasal redness, pulmonary fibrosis and inflammatory cell infitrates in the lungs were observed at lowest dose of 25 mg/m3 and can be attributed to the irritant properties and to the physico-chemical properties of fine low-solubility particles of benzoic acid. NOAEL (No-Observed-Adverse-Effect-Level), dermal, rabbit - 2500 mg/kg bw/day. BENZOIC ACID AND BENZOATE SALTS: At higher doses (oral) increased mortality, reduced weight gain, convulsions (central nervous system effects), liver and kidney effects were observed.

Aspiration hazard: Not classified (technical impossibility to obtain the data).

Other toxicity information: No additional information available.

SECTION 12: Ecological information

Ecotoxicity:

Chemical NameFish 96 hour LC50Fish 96 hour LC50Fish 96 hour LC50Potassium benzoate>100 mg/L (Sodium benzoate)N/E10 mg/L (Sodium benzoate)

 Chemical Name
 Invertebrates 48 hour EC50
 Invertebrates 24 hour EC50
 Invertebrates Chronic NOEC

 Potassium benzoate
 >100 mg/l (Sodium benzoate)
 N/F
 N/F

Potassium benzoate >100 mg/L (Sodium benzoate) N/E N/E

Chemical Name Algae 96 hour EC50 Algae 72 hour EC50 Algae Chronic NOEC

Potassium benzoate >30.5mg/L (Sodium benzoate) N/E EC10=6.5 mg/L (72 hours) (Sodium benzoate)

Persistence and degradability:

 Chemical Name
 Biodegradation

 Potassium benzoate
 Readily biodegradable

Bioaccumulative potential:

 Chemical Name
 Bioconcentration Factor (BCF)
 Log Kow

 Potassium benzoate
 N/E
 1.88 (Benzoic acid)

Mobility in soil:

 Chemical Name
 Mobility in soil (Koc/Kow)

 Potassium benzoate
 14.5 (calculated)

Other adverse effects: No additional information available.

SECTION 13: Disposal considerations

Although this product is not defined or designated as hazardous by current provisions of the Federal (EPA) Resource Conservation and Recovery Act (RCRA, 40CFR261), recognize that in appropriate dust/air ratio, dust cloud in air may have explosion potential. Incinerate or landfill waste in a properly permitted facility in accordance with federal, state and local regulations.

See Section 8 for recommendations on the use of personal protective equipment.

SECTION 14: Transport information

The information below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions.

UN number: N/A

UN proper shipping name:

Not regulated - See Bill of Lading for Details

Transport hazard class(es):

U.S. DOT hazard class: N/A Canada TDG hazard class: N/A Europe ADR/RID hazard class: N/A

IMDG Code (ocean) hazard class: N/A ICAO/IATA (air) hazard class: N/A

A "N/A" listing for the hazard class indicates the product is not regulated for transport by that regulation.

Packing group: N/A

Environmental hazards:

Marine pollutant: Not Applicable

Hazardous substance (USA): Not Applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: Not Applicable

Special precautions for user: Not Applicable

SECTION 15: Regulatory information

Safety, health and environment regulations/legislation specific for the product:

U.S. federal and state regulations/legislation:

This SDS has been prepared in accordance with the hazard criteria of the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Reportable Quantity (RQ):

Not Applicable

U.S. Superfund Amendments and Reauthorization Act (SARA) - SARA Section 313:

None Known

California Proposition 65:

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

None known to be present or none in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards:

None known to be present or none in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.

Canada regulations/legislation:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Canadian Workplace Hazardous Material Information System (WHMIS) classification: D2B

Canadian Ingredient Disclosure List:

None known to be present or none in reportable amounts

Mexico regulations/legislation:

This SDS contains the information required by NOM-018-STPS-2000 Workplace Hazardous Chemical Substances Communication and Identification Standard.

Chemical inventories:

<u>Regulation</u>	<u>Status</u>
Canadian Domestic Substances List (DSL):	Υ
Canadian Non-Domestic Substances List (NDSL):	N
U.S. Toxic Substances Control Act (TSCA):	Υ

A "Y" listing indicates all intentionally added components are either listed or are otherwise compliant with the regulation. A "N" listing indicates that for one or more components: 1) there is no listing on the public inventory; 2) no information is available; or 3) the component has not been reviewed.

SECTION 16: Other information

SDS Revision date: 10/14/2014

HMIS (Hazardous Materials Identification System) Ratings:

Health: 2 Flammability: 1 Reactivity (Stability): 0 Personal Protection: X

NFPA (National Fire Protection Association) Ratings:

Health: 2 Flammability: 1 Instability: 0

Key: 0=Insignificant; 1=Slight; 2=Moderate; 3=High; 4=Extreme. An asterisk appearing after the HMIS Health numerical rating denotes a chronic hazard.

Hazardous Materials Identification System (HMIS), National Paint and Coating Association, rating applies to product "as packaged" (i.e., ambient temperature). Ratings are based upon HMIS® III and NFPA 704 (2007). An asterisk appearing after the HMIS Health® III numerical rating denotes a chronic hazard. National Fire Protection Association (NFPA) rating identifies the severity of hazards of material during a fire emergency (i.e., "on fire").

Legend:

*: Trademark owned by Emerald Performance Materials, LLC.

ACGIH: American Conference of Governmental Industrial Hygienists

N/A: Not Applicable N/E: None Established

STEL: Short Term Exposure Limit

TWA: Time Weighted Average (exposure for 8-hour workday)

Users Responsibility/Disclaimer of Liability:

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local laws and local regulations remains the responsibility of the user.

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to develop appropriate work practice guidelines and employee instructional programs for your operation.

Safety Data Sheet Preparer: Product Compliance Department Emerald Performance Materials, LLC 2020 Front Street, Suite 100 Cuyahoga Falls, Ohio 44221 United States