



Safety Data Sheet (SDS)

North American

Revision date:4/28/2014

SECTION 1: Identification

Product identifiers:

Product trade name: Kalama* Benzyl Alcohol, FCC
Company product number: BZALCFCC
Other means of identification: Benzene methanol; Phenylcarbinol; alpha-Hydroxytoluene; Phenylmethanol; (Hydroxymethyl)benzene; alpha-Toluenol

Recommended use of the chemical and restrictions on use:

Uses: Organic liquid
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):

Acute Toxicity, Oral, category 4
Eye Irritation, category 2
Acute Toxicity, Inhalation, category 4

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

Hazard pictogram(s):



Signal word:

Warning

Hazard statements:

H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.

Precautionary statements:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

SDS Name: Kalama* Benzyl Alcohol, FCC

P271 Use only outdoors or in a well-ventilated area.

P280 Wear eye protection/face protection.

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

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.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P330 Rinse mouth.

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

P501 Dispose of contents/container in accordance with local, regional and international regulations.

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

See Section 11 for toxicological information.

SECTION 3: Composition/information on ingredients

Substance:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Weight%</u>
0000100-51-6	Benzyl alcohol	60-100

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: Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water until no evidence of the chemical remains (at least 15-20 minutes). Launder clothing before reuse. If skin irritation occurs: Get medical advice/attention.

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: Dizziness, Drowsiness, Headache, Irritation, Nausea. 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: IIIB

Extinguishing media:

Suitable: NFPA Class IIIB (Combustible liquid): Use water spray, ABC dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unsuitable: None known.

Special hazards arising from the chemical:

Unusual fire/explosion hazards: Product is not considered a fire hazard, but will burn if ignited. Product can form a flammable vapor/air mixture at temperatures at or above the flash point. Closed container may rupture (due to build up in pressure) when exposed to extreme heat.

Hazardous combustion products: Irritating or toxic substances will 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: 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. Eliminate ignition sources. Personal Protective Equipment must be worn.

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

Methods and materials for containment and cleaning up: Contain by diking with sand, earth or other non-combustible material. Wear proper personal protective clothing and equipment. Absorb spill with an inert material. 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. Do not cut, puncture, or weld on or near the container. Do not breathe dust, vapor, aerosol, mist or gas. Do not ingest, taste, or swallow. 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. Wash contaminated clothing before reuse. Provide eyewash fountains and safety showers in the work area.

Conditions for safe storage, including any compatibilities: Store cool and dry, under well-ventilated conditions. Storage temperature: -15-40°C (5-104°F). Store this material away from incompatible substances (see section 10). Do not allow product to freeze. Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Avoid storage in aluminum or iron containers. Empty container contains residual product which may exhibit hazards of product. Do not reuse empty container without commercial cleaning or reconditioning. Product can easily oxidize. It is recommended that opened containers be padded with nitrogen. Protect from light.

SECTION 8: Exposure controls / personal protection

Control parameters:

Occupational exposure limits (OEL):

<u>Chemical Name</u>	<u>ACGIH - TWA</u>	<u>ACGIH - STEL</u>		
Benzyl alcohol	N/E	N/E		
<u>Chemical Name</u>	<u>OSHA - PEL</u>	<u>OSHA - STEL</u>	<u>OSHA - Ceiling</u>	<u>Mexico</u>
Benzyl alcohol	N/E	N/E	N/E	N/E

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

BENZYL ALCOHOL: American Industrial Hygiene Association (AIHA) recommends a Workplace Environmental Exposure Level (WEEL) of 10 ppm (8-hour TWA).

Exposure controls:

Appropriate engineering controls: Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist and vapor 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. (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 chemical resistant (impervious) gloves. Use good laboratory/workplace procedures including personal protective clothing: labcoat, safety glasses and protective gloves.

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment. Wear an approved respirator (e.g., an organic vapor respirator, a full face air purifying respirator for organic vapors, or a self-contained breathing apparatus) whenever exposure to aerosol, mist, spray, fume or vapor exceed the applicable exposure limit(s) of any chemical substance listed in this SDS. 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.

SECTION 9: Physical and chemical properties

Form:	Liquid	pH:	Not Available
Appearance:	Colorless	Relative density:	1.045 @ 20°C
Odor:	Slight aromatic	Partition coefficient (n-octanol/water):	1.05
Odor threshold:	Not Available	% Volatile by weight:	100%
Solubility in water:	40 g/L @ 20°C	VOC:	100%
Evaporation rate:	< 0.01	Boiling point °C:	205 °C
Vapor pressure:	<1 mm Hg @ 20 °C	Boiling point °F:	401 °F
Vapor density:	3.7 (Air=1)	Flash point:	99-101 °C (210-214 °F) Tag Closed Cup
Viscosity:	8 cP @ 20°C	Auto-ignition temperature:	436 °C (817 °F)
Melting point/Freezing point:	-15.4 °C (4.3 °F)	Flammability (solid, gas):	Not Applicable (liquid)
Oxidizing properties:	Not oxidizing	Flammability or explosive limits:	LFL/LEL 1.3% UFL/UEL 13%
Explosive properties:	Not explosive	Surface tension:	39 mN/m @ 20°C (1g/L)
Decomposition temperature:	Not Available		

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

SECTION 10: Stability and reactivity

Reactivity: Can react violently in contact with strong oxidizing agents, isocyanates, acetaldehyde, lithium aluminum hydride, aluminum alkyl compounds, strong mineral acids (i.e. sulfuric acid), and hydrogen bromide.

Chemical stability: This product is stable. In the presence of air, benzyl alcohol will very slowly oxidize to benzaldehyde.

Possibility of hazardous reactions: Hazardous polymerization will not occur.

Conditions to avoid: Do not freeze. Avoid exposure to air, moisture, ignition sources and elevated temperatures.

Incompatible materials: Avoid strong acids and oxidizing agents. Avoid contact with iron and aluminum. Will attack some form of plastics.

Hazardous decomposition products: Carbon dioxide and carbon monoxide. Benzaldehyde.

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. Overexposure by inhalation or ingestion may cause dizziness, drowsiness, headache, nausea, vomiting, diarrhea, convulsions, central nervous system depression and loss of consciousness.

SDS Name: Kalama* Benzyl Alcohol, FCC

Eyes: Causes serious eye irritation.

Skin: May be harmful in contact with skin. Repeated or prolonged contact may cause irritation, dermatitis, defatting and drying or cracking of the skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Inhalation: Harmful by inhalation. Inhalation of high vapor concentration may cause headache, drowsiness and irritation of the eyes and respiratory tract.

Ingestion: Harmful if swallowed. Ingestion may cause nausea, vomiting and diarrhea.

Symptoms/effects, acute and delayed: Dizziness, Drowsiness, Headache, Irritation, Nausea

Acute toxicity information: Harmful if inhaled (Category 4). Harmful if swallowed (Category 4).

<u>Chemical Name</u>	<u>Inhalation LC50</u>	<u>Species</u>	<u>Oral LD50</u>	<u>Species</u>	<u>Dermal LD50</u>	<u>Species</u>
Benzyl alcohol	>4178 mg/m ³ (4 hours, aerosol)	Rat/ adult	1620 mg/kg	Rat/ adult	N/E	

Skin corrosion/irritation: Not classified (based on available data, the classification criteria are not met).

<u>Chemical Name</u>	<u>Skin Irritation</u>	<u>Species</u>
Benzyl alcohol	Non-irritant (OECD 404)	Rabbit/ adult

Serious eye damage/irritation: Causes serious eye irritation (Category 2A).

<u>Chemical Name</u>	<u>Eye irritation</u>	<u>Species</u>
Benzyl alcohol	Irritant (OECD 405)	Rabbit/ adult

Respiratory or skin sensitization: Not classified (based on available data, the classification criteria are not met). BENZYL ALCOHOL: This material has a low potential to cause allergic skin reactions, however cases of skin sensitization have been reported.

<u>Chemical Name</u>	<u>Skin sensitisation</u>	<u>Species</u>
Benzyl alcohol	Non-sensitizer	Guinea pig and Human Patch

Carcinogenicity: Not classified (based on available data, the classification criteria are not met). BENZYL ALCOHOL: Under conditions of a two-year NTP gavage study, there was no evidence of carcinogenic activity for rats or mice receiving 200 or 400 mg/kg.

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). BENZYL ALCOHOL: Ames testing showed no mutagenic activity and mixed results both positive and negative were observed from other in-vitro genotoxicity assays. Benzyl alcohol showed no genotoxicity during in-vivo testing. The weight of the evidence indicates this material is not mutagenic or clastogenic.

Reproductive toxicity: Not classified (based on available data, the classification criteria are not met). BENZYL ALCOHOL: No effects on reproductive organs were observed in subchronic and long-term studies with rats and mice. Developmental toxicity oral study, mouse: NOAEL (no-observed-adverse-effect level), maternal toxicity=550 mg/kg bw/day; NOAEL, developmental toxicity=550 mg/kg bw/day. No developmental effects were observed in absence of maternal toxicity.

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). BENZYL ALCOHOL: Long term animal studies indicate a gavage NOAEL (no-observed-adverse-effect-level) \geq 400 mg/kg/day for rats and \geq 200 mg/kg/day for mice. At higher doses, effects on bodyweights, brain lesions, thymus, skeletal muscle, kidneys, liver and central nervous system were observed. In a 4-week inhalation study in rats on Benzyl Alcohol, no adverse effects were observed with a no-observed-adverse-effect level (NOAEC) of 1,072 mg/m³.

Aspiration hazard: Not classified (based on available data, the classification criteria are not met).

Other toxicity information: No additional information available.

SECTION 12: Ecological information

Ecotoxicity: BENZYL ALCOHOL: Toxicity to Micro-organisms, inhibition of microbial activity, 24 hours, EC50 = 390 mg/L.

Chemical Name Benzyl alcohol	Fish 96 hour LC50 460 mg/L	Fish 96 hour LC50 >100 mg/L	Fish Chronic NOEC N/E
Chemical Name Benzyl alcohol	Invertebrates 48 hour EC50 230 mg/L	Invertebrates 24 hour EC50 400 mg/L	Invertebrates Chronic NOEC 51 mg/L (21 days, reproduction)
Chemical Name Benzyl alcohol	Algae 96 hour EC50 N/E	Algae 72 hour EC50 770 mg/L	Algae Chronic NOEC 310 mg/L (72 hours, growth rate)

Persistence and degradability:

Chemical Name Benzyl alcohol	Biodegradation Readily biodegradable
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Bioaccumulative potential:

Chemical Name Benzyl alcohol	Bioconcentration Factor (BCF) 1.37 (calculated)	Log Kow 1.05
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Mobility in soil:

Chemical Name Benzyl alcohol	Mobility in soil (Koc/Kow) 15.7 (calculated)
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Other adverse effects: No additional information available.

SECTION 13: Disposal considerations

For waste disposal purposes, this product is not known to be defined or designated as hazardous by current provisions of the Federal (EPA) Resource Conservation and Recovery Act (RCRA, 40CFR261). Incinerate waste product when in liquid form (i.e., as supplied) in a properly permitted (approved) incineration facility in accordance with federal, state and local regulations. Liquids cannot be disposed of in a landfill.

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: BENZYL ALCOHOL: IBC Code Category Y.

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:

The following components are on the Canadian Ingredient Disclosure List (WHMIS):
Benzyl alcohol

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):	Y
Canadian Non-Domestic Substances List (NDSL):	N
U.S. Toxic Substances Control Act (TSCA):	Y

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: 4/28/2014

HMIS (Hazardous Materials Identification System) Ratings:

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

NFPA (National Paint and Coating Association) Ratings:

Health: 2 **Flammability:** 1 **Instability:** 0

SDS Name: Kalama* Benzyl Alcohol, FCC

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