



Safety Data Sheet (SDS)

International (GHS)

Revision date: 2018-07-24

SECTION 1: Identification

Product identifiers:

Product trade name: Kalama* K-FLEX* PG
Company product number: KFLEXPB
Other means of identification: Propylene glycol dibenzoate

Recommended use of the chemical and restrictions on use:

Uses: Plasticizer
Restrictions on use: None identified

Details of the supplier:

Manufacturer/Supplier: Emerald Performance Materials, LLC
1499 SE Tech Center Place, Suite 300
Vancouver, WA 98683
United States
Telephone: +1-360-954-7100
FAX: +1-360-954-7201
For further information about this SDS: Email: product.compliance@emeraldmaterials.com

Emergency telephone number:

ChemTel (24 hours): 1-800-255-3924 (USA); +1-813-248-0585 (outside USA);
1-300-954-583 (Australia); 000-800-100-4086 (India).

SECTION 2: Hazard(s) identification

Classification of the substance or mixture:

Acute Toxicity, Oral, category 5, H303
Hazardous to the aquatic environment, Acute, category 2, H401

Label elements:

Hazard pictogram(s): Not Applicable

Signal word:
Warning

Hazard statements:
H303 May be harmful if swallowed.
H401 Toxic to aquatic life.

Precautionary statements:
P273 Avoid release to the environment.
P312 Call a POISON CENTRE/doctor if you feel unwell.
P501 Dispose of contents/container in accordance with local, regional and international regulations.

Supplemental information: No Additional Information

Classification and hazards statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Regulations in individual countries/regions may determine which classifications and hazard statements are applicable based on adopted hazard classes and categories. 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.

Other hazards: 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>
0019224-26-1	1,2-Propanediol dibenzoate	96-100

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

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: Any material that contacts the eye should be washed out immediately with water. Get medical attention if symptoms occur.

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. Get medical attention if symptoms occur.

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: Irritation. Pre-existing skin problems may be aggravated by prolonged or repeated contact. 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

Extinguishing media:

Suitable: 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. 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 (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.

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 laundry 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. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Use under well-ventilated conditions. Avoid eye contact. Avoid repeated or prolonged skin contact. Avoid inhalation of aerosol, mist, spray, fume or vapor. Avoid drinking, tasting, swallowing or ingesting this product. Wash contaminated clothing before reuse. Provide eyewash fountains and safety showers in the work area.

Conditions for safe storage, including any incompatibilities: Store cool and dry, under well-ventilated conditions. Keep away from heat, sparks and open flames. 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. Empty container contains residual product which may exhibit hazards of product. Plasticizer products will soften plastic materials and as a result they should not be transported in piping systems constructed from these materials.

SECTION 8: Exposure controls / personal protection

Control parameters:

Occupational exposure limits (OEL):

<u>Chemical Name</u>	<u>ACGIH - TWA/Ceiling</u>	<u>ACGIH - STEL</u>		
1,2-Propanediol dibenzoate	N/E			
<u>Chemical Name</u>	<u>Australia</u>	<u>New Zealand</u>	<u>Korea</u>	<u>Taiwan</u>
1,2-Propanediol dibenzoate	N/E	N/E	N/E	N/E
<u>Chemical Name</u>	<u>Japan ISHL</u>	<u>Japan JSOH</u>	<u>Indonesia</u>	<u>Malaysia</u>
1,2-Propanediol dibenzoate	N/E	N/E	N/E	N/E
<u>Chemical Name</u>	<u>Philippines</u>	<u>Singapore</u>		
1,2-Propanediol dibenzoate	N/E	N/E		

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 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.

Individual protection measures, such as personal protective equipment:

Eye/face protection: Wear eye protection.

Skin and body protection: Wear protective 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.

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 to pale yellow	Relative density:	1.14
Odor:	Slight aromatic	Partition coefficient (n-octanol/water):	3.9 (OECD 117)
Odor threshold:	Not Available	% Volatile by weight:	5.8%
Solubility in water:	Slight	VOC:	5.8% ASTM D2369
Evaporation rate:	Slower than n-butyl acetate	Boiling point °C:	Decomposes before boiling >295°C
Vapor pressure:	<0.1 mm Hg @ 20°C; 0.06 Pa @ 25°C	Boiling point °F:	Decomposes before boiling >563°F
Vapor density:	Heavier than air	Flash point:	138 °C (280 °F) Pensky-Marten Closed Cup
Viscosity:	71 cSt @ 25°C	Auto-ignition temperature:	>400°C (>752°F)

SDS Name: Kalama* K-FLEX* PG

Melting point/Freezing point: -21°C (-5.8°F)

Oxidizing properties: Not oxidizing

Explosive properties: Not explosive

Decomposition temperature: Not Available

Flammability (solid, gas): Not Applicable (liquid)

Flammability or explosive limits: LFL/LEL Not Available

UFL/UEL Not Available

Surface tension: 43.5 dynes/cm @25°C (ASTM D1331)

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

SECTION 10: Stability and reactivity

Reactivity: None known.

Chemical stability: This product is stable.

Possibility of hazardous reactions: Hazardous polymerization will not occur.

Conditions to avoid: Excessive heat and ignition sources.

Incompatible materials: Avoid contact with strong oxidizing agents.

Hazardous decomposition products: Carbon dioxide, carbon monoxide and hydrocarbons.

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: May cause eye irritation.

Skin: May cause skin irritation.

Inhalation: High airborne concentrations of vapors resulting from heating, misting or spraying may cause irritation of the respiratory tract and mucous membranes.

Ingestion: May be harmful if swallowed. Ingestion may cause irritation.

Acute toxicity information: May be harmful if swallowed - Category 5. Oral LD50, Rat: >2000-<5000 mg/kg. Dermal LD50, Rat: >2000 mg/kg. Inhalation LC50, Rat: >5.32 mg/L, 4 hours.

<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>
1,2-Propanediol dibenzoate	>5.32 mg/L (4 hours, aerosol)	Rat/ adult	2661 mg/kg	Rat/ adult female	>2000 mg/kg	Rabbit/ adult

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>
1,2-Propanediol dibenzoate	Non-irritant	Similar materials

Serious eye damage/irritation: Not classified (based on available data, the classification criteria are not met).

<u>Chemical Name</u>	<u>Eye irritation</u>	<u>Species</u>
1,2-Propanediol dibenzoate	Non-irritant	Similar materials

Respiratory or skin sensitization: Not classified (based on available data, the classification criteria are not met).

<u>Chemical Name</u>	<u>Skin sensitisation</u>	<u>Species</u>
1,2-Propanediol dibenzoate	Non-sensitizer	Weight of evidence

Carcinogenicity: Not classified (no relevant information found).

Germ cell mutagenicity: Not classified (based on available data, the classification criteria are not met). 1,2-PROPANEDIOL DIBENZOATE: 1,2-Propanediol dibenzoate has shown no evidence of causing an increase in the frequency of structural

SDS Name: Kalama* K-FLEX* PG

chromosome aberrations in the in vitro Mammalian Chromosome Aberration Test and did not demonstrate mutagenic potential in the in vitro mouse lymphoma cell mutation and Ames bacterial reverse mutation assays.

Reproductive toxicity: Not classified (based on available data, the classification criteria are not met). 1,2-PROPANEDIOL DIBENZOATE: Reproductive toxicity, oral study in rats: NOAEL (no-observed adverse-effect-level) 300 mg/kg bw/day. Developmental toxicity oral study, rats: NOAEL, developmental toxicity=300 mg/kg bw/day.

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). 1,2-PROPANEDIOL DIBENZOATE: Repeated dose study, oral gavage, rat: NOAEL (no-observed-adverse-effect-level) =300 mg/kg bw/day.

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: Freshwater Fish Toxicity: The acute LC50 is >1 - 10 mg/L (calculated value). Freshwater Invertebrates Toxicity: The acute EC50 is >1 - 10 mg/L based on actual data. Algal Toxicity: The acute EC50 is >1 - 10 mg/L based on actual data. 1,2-PROPANEDIOL DIBENZOATE: Microorganism Toxicity (activated sludge): The acute EC50 is >1000 mg/L, 3 hours; NOEC: 100 mg/L (OECD 209).

Chemical Name 1,2-Propanediol dibenzoate	Fish 96 hour LC50 3.7 mg/L (calculated)	Fish 96 hour LC50 N/E	Fish Chronic NOEC N/E
Chemical Name 1,2-Propanediol dibenzoate	Invertebrates 48 hour EC50 5.14 mg/L	Invertebrates 24 hour EC50 N/E	Invertebrates Chronic NOEC N/E
Chemical Name 1,2-Propanediol dibenzoate	Algae 96 hour EC50 2.1 mg/L (calculated)	Algae 72 hour EC50 1.53 mg/L	Algae Chronic NOEC 0.298 mg/L (72 hours)

Persistence and degradability: This product is readily biodegradable.

Chemical Name 1,2-Propanediol dibenzoate	Biodegradation Readily biodegradable (OECD 301F)
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Bioaccumulative potential: Not expected to bioaccumulate.

Chemical Name 1,2-Propanediol dibenzoate	Bioconcentration Factor (BCF) N/E	Log Kow 3.9 (OECD 117)
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Mobility in soil: No specific information available.

Chemical Name 1,2-Propanediol dibenzoate	Mobility in soil (Koc/Kow) 4400
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Other adverse effects: No additional information available.

SECTION 13: Disposal considerations

Dispose of unused contents (incineration) in accordance with national and local regulations. Dispose of container in accordance with national and local regulations. Ensure the use of properly authorized waste management companies, where appropriate.

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):

SDS Name: Kalama* K-FLEX* PG

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

Special precautions for user: Not Applicable

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

SECTION 15: Regulatory information

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

Japan regulations:

Japan Industrial Safety and Health Law:

<u>Chemical name</u>	<u>Category</u>
No subject chemicals	

Japan Fire Service Law:

<u>Chemical name</u>	<u>Category</u>
No subject chemicals	

Japan Poisonous and Deleterious Substances:

<u>Chemical name</u>	<u>Category</u>	<u>Threshold</u>
No subject chemicals		

Japan Prevention of Marine Pollution and Disaster:

<u>Chemical name</u>	<u>Category</u>
No subject chemicals	

Japan Chemical Substances Control Law:

<u>Chemical name</u>	<u>Category</u>	<u>Notes</u>
No subject chemicals		

Korean regulations:

Korea Industrial Safety and Health Act:

<u>Chemical name</u>	<u>Category</u>	<u>Threshold</u>
No subject chemicals		

Korea Act on Registration and Evaluation of Chemical Substances (K-REACH) - Substances subject to registration:

No subject chemicals

Korea Chemical Control Act (CCA):

<u>Chemical name</u>	<u>Category</u>	<u>Code</u>	<u>Threshold</u>
No subject chemicals			

Korea Safety Control of Dangerous Substances Act (MPSS):

<u>Chemical name</u>	<u>Class</u>	<u>Threshold</u>
No subject chemicals		

Korea Waste Control Act: Waste disposal methods must comply with local and national laws.

<u>Chemical name</u>	<u>Notes</u>
No subject chemicals	

Other regulations: No Additional Information

Chemical inventories:

<u>Regulation</u>	<u>Status</u>
Australian Inventory of Chemical Substances (AICS):	Y
Canadian Domestic Substances List (DSL):	N
Canadian Non-Domestic Substances List (NDSL):	Y
China Inventory of Existing Chemical Substances (IECSC):	Y
European EC Inventory (EINECS, ELINCS, NLP):	Y
Japan Existing and New Chemical Substances (ENCS):	N
Japan Industrial Safety and Health Law (ISHL):	Y

Regulation

Status

Korean Existing and Evaluated Chemical Substances (KECL):	Y
New Zealand Inventory of Chemicals (NZIoC):	Y
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Y
Taiwan Inventory of Existing Chemicals:	Y
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. A "Y" for New Zealand may mean that a qualified group standard may exist for the components in this product.

Chemical inventory notes: New Zealand: One or more components may be covered by a group standard.

Europe REACh (EC) 1907/2006: Applicable components are registered, exempt or otherwise compliant. REACh is only relevant to substances either manufactured or imported into the EU. Emerald Performance Materials has met its obligations under the REACh regulation. REACh information regarding this product is provided for informational purposes only. Each Legal Entity may have differing REACh obligations, depending on their place in the supply chain. For material manufactured outside of the EU, the importer of record must understand and meet their specific obligations under the regulation.

SECTION 16: Other information

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:

The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.

Safety Data Sheet Preparer:
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