



Safety Data Sheet (SDS)

North American (U.S. and Canada)

Revision date: 2018-05-09

SECTION 1: Identification

Product identifiers:

Product trade name: Kalama* K-FLEX* 850P
Company product number: FLEX850P
Other means of identification: Not Available

Recommended use of the chemical and restrictions on use:

Uses: Plasticizer
Restrictions on use: None identified

Details of the supplier:

Manufacturer/Supplier: EMERALD KALAMA CHEMICAL B.V.
Havennr. 4322 - Montrealweg 15
3197 KH Rotterdam-Botlek - THE NETHERLANDS
Telephone: +31 88 888 0512/-0509 - FAX: +31 20 794 8466
kflex.emea@emeraldmaterials.com
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

Information in accordance with U.S. 29 CFR 1910.1200 (Hazcom 2012) and Canada Hazardous Products Regulations (WHMIS 2015):

Classification of the product:

Not classified as hazardous under any GHS hazard class according to U.S. 29 CFR 1910.1200 (Hazcom 2012) and Canada Hazardous Products Regulations (WHMIS 2015).

Label elements:

Hazard pictogram(s): Not Applicable
Signal word: Not Applicable
Hazard statements: Not Applicable
Precautionary statements: Not Applicable
Supplemental information: No Additional Information

Hazards not otherwise classified:

Physical hazards not otherwise classified: No Additional Information
Health hazards not otherwise classified: No Additional Information

See Section 11 for toxicological information.

SECTION 3: Composition/information on ingredients

Mixture:

No Hazardous Components found under applicable regulations.
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

NFPA flammability class: III B

Extinguishing media:

Suitable: NFPA Class III B (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. 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 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. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the

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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): No applicable exposure limits.

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: 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: Respiratory protection is not needed with proper ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. 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 to light yellow	Relative density:	1.14
Odor:	Slight aromatic	Partition coefficient (n-octanol/water):	>3-<4
Odor threshold:	Not Available	% Volatile by weight:	1.7%
Solubility in water:	Negligible	VOC:	1.7% ASTM D2369
Evaporation rate:	Slower than n-butyl acetate	Boiling point °C:	180°C @ 5 mm Hg
Vapor pressure:	<0.1 mm Hg @ 20°C	Boiling point °F:	356°F @ 5 mm Hg
Vapor density:	Heavier than air	Flash point:	193°C (379°F) ASTM D-92
Viscosity:	66 cSt @ 25°C	Auto-ignition temperature:	Not Available
Melting point/Freezing point:	14°C (57°F)	Flammability (solid, gas):	Not Applicable (liquid)
Oxidizing properties:	Not oxidizing	Flammability or explosive limits:	LFL/LEL Not Available
Explosive properties:	Not explosive		UFL/UEL Not Available
Decomposition temperature:	Not Available	Surface tension:	45 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.

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Possibility of hazardous reactions: Hazardous polymerization will not occur.

Conditions to avoid: Excessive heat and ignition sources.

Incompatible materials: Avoid strong acids, bases, and oxidizing agents. Avoid contact with phenols.

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: Repeated or prolonged skin contact may cause 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.

Symptoms/effects, acute and delayed: Irritation

Acute toxicity information: Not classified (based on available data, the classification criteria are not met). ATEmix (oral): >4000 - <5000 mg/kg. ATEmix (dermal): >2000 mg/kg. ATEmix (inhal.): >200 mg/l, 4 hours.

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

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

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

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

Carcinogenic status: The components of this mixture are not known to be listed or regulated by IARC (Group 1 or 2), NTP, OSHA or ACGIH.

Germ cell mutagenicity: Not classified (based on available data, the classification criteria are not met). DIETHYLENE GLYCOL DIBENZOATE: In vitro testing showed no mutagenic activity. DIPROPYLENE GLYCOL DIBENZOATE: In vitro testing showed no mutagenic activity.

Reproductive toxicity: Not classified (based on available data, the classification criteria are not met). DIETHYLENE GLYCOL DIBENZOATE: Animal studies indicated a NOAEL (no-observed-adverse-effect-level) for maternal toxicity of 1000 mg/kg/day and for fetal toxicity of 500 mg/kg/day (rats). DIPROPYLENE GLYCOL DIBENZOATE: Reproductive toxicity, 2-generation oral study in rats: NOAEL (no-observed adverse-effect-level) 500 mg/kg bw/day. Developmental toxicity, oral, rats: NOAEL of 500 mg/kg bw/day; Developmental toxicity, oral, rabbit (OECD 414): NOAEL of 250 mg/kg bw/day (maternal toxicity, embryo/fetal developmental 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). DIETHYLENE GLYCOL DIBENZOATE: A 13-week dietary study in rats at a dose of 2500 mg/kg/day observed decreased body weights, blood, spleen and caecum effects which showed completed recovery within 4 weeks after exposure. NOAEL (No-Observed-Adverse-Effect-Level), oral, rat - 1000 mg/kg bw/day. DIPROPYLENE GLYCOL DIBENZOATE: A 13-week dietary study in rats observed decreased body weights, and liver, spleen and caecum effects at a dose of 2500 mg/kg/day which showed completed recovery within 4 weeks after exposure. NOAEL (No-Observed-Adverse-Effect-Level), oral, rat - 1000 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: DIETHYLENE GLYCOL DIBENZOATE: Freshwater Fish Toxicity: acute LL50 2.9 mg/L. Freshwater Invertebrates Toxicity: acute EL50 6.7 mg/L. Algal Toxicity - EL50: 11 mg/L, NOELR: 2.2 mg/L. DIPROPYLENE GLYCOL DIBENZOATE: Freshwater Fish Toxicity - 96 hour LC50=3.7 mg/L. Freshwater Invertebrates Toxicity - 48 hour EL50=19.3 mg/L. Algal Toxicity - 96 hour EL50=3.6 mg/L, NOELR=0.46 mg/L.

Persistence and degradability: Expected to readily biodegrade, based on similar material(s).

Bioaccumulative potential: Not expected to bioaccumulate.

Mobility in soil: No specific information available.

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. Federal, state and local regulations where the waste material is generated, treated, and/or disposed of must be examined to verify the appropriate waste classification.

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 environmental regulations specific for the product in question:

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:

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and 40 CFR 372:

None known

U.S. TSCA Section 12(b) Export Notification:

This product is not subject to TSCA 12(b) reporting requirements.

California Proposition 65:

The following ingredient(s) present in the product is [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.

The following ingredient(s) present in the product is [are] known to the State of California to cause birth defects or other reproductive harm:

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.

Notes: No additional information

Canada regulations/legislation:

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

Notes: No additional information

Chemical inventories:

<u>Regulation</u>	<u>Status</u>
Australian Inventory of Chemical Substances (AICS):	Y
Canadian Domestic Substances List (DSL):	Y
Canadian Non-Domestic Substances List (NDSL):	N
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
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.

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

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HMIS (Hazardous Materials Identification System) Ratings:

Health: 1 **Flammability:** 1 **Physical hazard:** 0 **Personal Protection:** X

NFPA (National Fire Protection Association) Ratings:

Health: 1 **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

AIHA WEEL: American Industrial Hygiene Association (AIHA) Workplace Environmental Exposure Level (WEEL)

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

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