

SECTION 1: Identification**Product identifiers:**

Product trade name: Kalama* Florosol S
Company product number: FLOROSOLS
Other means of identification: 32202; 2H-Pyran-4-ol, tetrahydro-4-methyl-2-(2-methylpropyl)-

Recommended use of the chemical and restrictions on use:

Uses: Fragrance ingredient; Industrial applications.
Restrictions on use: Consumer products with potential for significant oral contact.

Details of the supplier:

Manufacturer/Supplier: EMERALD KALAMA CHEMICAL LIMITED
Dans Road
Widnes
Cheshire WA8 0RF
United Kingdom
Telephone: +44 (0) 151 423 8000. FAX: +44 (0) 151 423 8127.
Email: product.compliance@emeraldmaterials.com

For further information about this SDS:**Emergency telephone number:**

ChemTel (24 hours): 1-800-255-3924 (USA); +001-813-248-0585 (outside USA).

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:

Eye Irritation, category 2

Label elements:**Hazard pictogram(s):****Signal word:**

Warning

Hazard statements:

H319 Causes serious eye irritation.

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.

Supplemental information: 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:**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**Substance:**

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Weight%</u>
0063500-71-0	Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)	95-100

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: 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: 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. Closed container may rupture (due to build up in pressure) when exposed to extreme heat.

Hazardous combustion products: Irritating or toxic substances may 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.

SDS Name: Kalama* Florosol S

Appearance:	Colorless to light yellow	Relative density:	0.943-0.953
Odor:	Floral	Partition coefficient (n-octanol/water):	1.65 @ 23°C
Odor threshold:	Not Available	% Volatile by weight:	Not Available
Solubility in water:	Partly soluble	VOC:	Not Available
Evaporation rate:	Not Available	Boiling point °C:	227 °C
Vapor pressure:	0.005 kPa (0.04 mm Hg) @ 20°C	Boiling point °F:	440 °F
Vapor density:	Not Available	Flash point:	106 °C (223 °F) Closed Cup
Viscosity:	234 mPa.s @ 20°C	Auto-ignition temperature:	328°C (622°F)
Melting point/Freezing point:	Not Available	Flammability (solid, gas):	Not Applicable (liquid)
Oxidizing properties:	Not oxidizing	Flammability or explosive limits:	LFL/LEL Not Available UFL/UEL Not Available
Explosive properties:	Not explosive		
Decomposition temperature:	Not Available		

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: Causes serious eye irritation.

Skin: Causes mild 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: 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).

Chemical Name	Inhalation LC50	Species	Oral LD50	Species	Dermal LD50	Species
Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)	N/E		>2000 mg/kg	Rat/ adult	>2000 mg/kg	Rabbit/ adult

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

Chemical Name	Skin irritation	Species
Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)	Mild irritant	Rabbit/ adult

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

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Chemical Name

Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)

Eye irritation

Irritant

Species

Rabbit/ adult

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

Chemical Name

Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)

Skin sensitisation

Non-sensitizer

Species

Guinea Pig/ adult

Carcinogenicity: Not classified (no relevant information found).

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). TETRAHYDRO-2-ISOBUTYL-4-METHYLPYRAN-4-OL, MIXED ISOMERS (cis and trans): Mutagenic assays were negative for both in vivo and in vitro assays.

Reproductive toxicity: Not classified. TETRAHYDRO-2-ISOBUTYL-4-METHYLPYRAN-4-OL, MIXED ISOMERS (cis and trans): Reproductive toxicity, dermal, rats: NOAEL (no-observed adverse-effect-level) 1000 mg/kg bw/day. Developmental toxicity dermal, rats: NOAEL (no-observed-adverse-effect level), maternal toxicity=1000 mg/kg bw/day; NOAEL, developmental toxicity=1000 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). TETRAHYDRO-2-ISOBUTYL-4-METHYLPYRAN-4-OL, MIXED ISOMERS (cis and trans): Repeated dose toxicity study: NOAEL (No-Observed-Adverse-Effect-Level), oral, rat - 125 mg/kg bw/day; NOAEL, dermal, 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:

Chemical Name

Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)

Fish 96 hour LC50

354 mg/L

Fish 96 hour LC50

N/E

Fish Chronic NOEC

N/E

Chemical Name

Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)

Invertebrates 48 hour EC50

320 mg/L

Invertebrates 24 hour EC50

N/E

Invertebrates Chronic NOEC

N/E

Chemical Name

Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)

Algae 96 hour EC50

N/E

Algae 72 hour EC50

>100 mg/L

Algae Chronic NOEC

N/E

Persistence and degradability:

Chemical Name

Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)

Biodegradation

Not readily biodegradable (OECD 301B)

Bioaccumulative potential:

Chemical Name

Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)

Bioconcentration Factor (BCF)

N/E

Log Kow

1.65 @ 23°C

Mobility in soil:

Chemical Name

Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)

Mobility in soil (Koc/Kow)

41.48 (calculated)

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:

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:

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:

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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

Mexico regulations/legislation:

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

Notes: No additional information

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: 2015-11-23

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.

SDS Name: Kalama* Florosol S

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