



SAFETY DATA SHEET

Conforms to the requirements of the United States Hazard Communication regulation 29 CFR 1910.1200

SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

PRODUCT NAME	GAMMA NONALACTONE
PRODUCT CASRN	104-61-0
PRODUCT DESCRIPTION	ALIPHATIC LACTONE
SDS DOCUMENT No.	K00990
RECOMMENDED USES	This product is intended for use in fragrance applications.

RESPONSIBLE PARTY

Kao Specialties Americas LLC
243 Woodbine Street
P. O. Box 2316
High Point, NC 27261
Telephone: 1-800-727-2214

Refer to SECTION 16 for information regarding the
MANUFACTURER(s) of this product

FOR ALL TRANSPORTATION ACCIDENTS, call Chemtrec at 800-424-9300 or 703-527-3887 for international collect calls.

SECTION 2: HAZARD(S) IDENTIFICATION

PRODUCT CLASSIFICATION per 29 CFR 1910.1200

HAZARD CLASSIFICATION

This product does not satisfy any of the criteria for a hazardous material per the guidelines established by the United Nations (Globally Harmonized System of Classification and Labelling of Chemicals) as specified in 29 CFR 1910.1200 Hazard Communication (2012).

SIGNAL WORD

Not Applicable

HAZARD STATEMENTS

Not Applicable

RECOMMENDED SAFETY PRECAUTIONS

INJURY PREVENTION	<p>Good industrial hygiene practices should be followed when handling this material. Avoid contact with eyes and skin. Do not breathe dusts/fumes/vapors of this material.</p> <p>Wash thoroughly after handling.</p> <p>When necessary, use appropriate personal protective equipment to prevent injury.</p>
EMERGENCY RESPONSE	<p>IF IN EYES: rinse cautiously with water for 15 minutes. Remove contact lens, if present and easy to do. Continue rinsing. Seek medical attention if necessary</p> <p>IF ON SKIN: gently wash with plenty of soap and water.</p> <p>Call a POISON CONTROL CENTER or doctor if symptoms develop or you feel unwell.</p>
PRODUCT STORAGE	<p>The storage area must be protected by properly designed containment to prevent the release of product to groundwater or sewers.</p> <p>Keep container tightly closed when not in use.</p> <p>Store in a well ventilated area.</p>
PRODUCT DISPOSAL	<p>DISPOSE of product and containers in accordance with all applicable local, state, federal, and international regulations.</p>

HAZARDS NOT OTHERWISE CLASSIFIED

PYROPHORIC GASES	Not applicable
SIMPLE ASPHYXIANTS	Not applicable
COMBUSTIBLE DUST	Not applicable

Dust Classification	Minimum Ignition Energy (mJ)	Pmax (bar-g)	Rmax (bar/s)	Kst (bar-m/s)	Explosion Severity
Not Applicable					

Definitions for dust classifications are found in OSHA Instruction CPL 03-00-008 *Combustible Dust National Emphasis Program (reissued)* March 11, 2008, Appendix E, Section 5

Other Known Hazards	None
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FOR INFORMATION REGARDING ENVIRONMENTAL GHS CLASSIFICATION, REFER TO SECTION 12 BELOW

SECTION 3: COMPOSITION/INFORMATION on INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration (%)
2(3H)-Furanone, dihydro-5-pentyl-	gamma-nonalactone	104-61-0	~ 100

If any items in the table above are described as CONFIDENTIAL, Kao Specialties Americas LLC considers this information to constitute a Trade Secret.

SECTION 4: FIRST-AID MEASURES

EYES	Immediately flush eyes with plenty of water for at least 15 minutes. If necessary, seek medical attention.
SKIN	For skin contact, wash immediately with soap and water. If necessary, seek medical attention.
INGESTION	If the material is swallowed, get immediate medical attention or advice.
INHALATION	If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.
SYMPTOMS of EXPOSURE	None known.
NOTES to PHYSICIAN	Provide general supportive measures and treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE PROPERTIES	Refer to SECTION 9: Physical and Chemical Properties
HAZARDOUS PRODUCTS of COMBUSTION	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.
PROPERTIES THAT COULD INCREASE FIRE or EXPLOSION HAZARD	No known hazards.
EXTINGUISHING MEDIA	Powder, alcohol-resistant foam, CO2 & sand
FIRE-FIGHTING INSTRUCTIONS	Firefighters should wear full protective clothing including self contained breathing apparatus.

NFPA ratings are found in SECTION 16

SECTION 6: ACCIDENTAL RELEASE MEASURES

FOR ALL TRANSPORTATION ACCIDENTS, call Chemtrec at 800-424-9300 or 703-527-3887 for international collect calls.

RESPONSE TO SMALL SPILLS OF PRODUCT

SPILL CONTAINMENT	Stop the flow of material, if this is without risk. Contain the discharged material.
SPILL CLEANUP PROCEDURES	Absorb spill with inert material. Shovel material into appropriate container for disposal.
REQUIRED EQUIPMENT	Shovel the material into waste container.
ADDITIONAL INFORMATION	No other spill procedures necessary.

RESPONSE TO LARGE SPILLS OF PRODUCT

SPILL CONTAINMENT	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent liquid from entering sewers. Keep out of drains and water courses.
SPILL CLEANUP PROCEDURES	Absorb spill with inert material. Shovel material into appropriate container for disposal. Thoroughly wash the area with water after a spill or leak clean-up. Dispose of spent absorbent in an approved industrial waste landfill.
REQUIRED EQUIPMENT	Wear appropriate protective equipment and clothing during clean-up.
ADDITIONAL INFORMATION	Surfaces may become slippery after spillage. Have emergency equipment readily available. Remove soiled clothing and laundry before reuse.

SECTION 7: HANDLING AND STORAGE

HANDLING REQUIREMENTS	As with all chemicals, good industrial hygiene practices should be followed when handling this material. Do not get this material in your eyes, on your skin, or on your clothing. Wash thoroughly after handling. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or promptly disposed of.
STORAGE REQUIREMENTS	Storage area should be protected by appropriately designed containment to prevent release to groundwater or sewers. Do not store this material in open or unlabeled containers. To protect purity, store under dry nitrogen gas.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS	Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.
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PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION	Wear chemical goggles.
HAND PROTECTION	Use impervious gloves.
SKIN PROTECTION	Normal work clothing (long sleeved shirts and long pants) is recommended.
RESPIRATORY PROTECTION	A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever there may be potential for airborne exposure.
OTHER	Eyewash fountains and emergency showers are required.

EXPOSURE LIMITS

CHEMICAL	CASRN	PERCENT	LIMITS	AGENCY
OSHA: No exposure limits established for this product				
ACGIH: No exposure limits established for this product				

SECTION 9: PHYSICAL and CHEMICAL PROPERTIES

APPEARANCE @ 20°C	Clear colorless to light yellow liquid.	ODOR	Characteristic odor
ODOR THRESHOLD	No data available	pH	No information available
VAPOR DENSITY	No data available	VAPOR PRESSURE	No data available
EVAPORATION RATE	No data available	RELATIVE DENSITY	0.97g/mL @ 20.0°C
MELTING POINT (°C)	No data available	WATER SOLUBILITY	No data available.
INITIAL BOILING POINT (°C)	No data available	BOILING RANGE (°C)	No data available
PARTITION COEFFICIENT (N-OCTANOL/WATER)	No data available	VISCOSITY	No data available
DECOMPOSITION TEMPERATURE	No data available	FLAMMABILITY CLASSIFICATION	CLASS IIIB
FLASH POINT (°C)	138.0°C Cleveland Open Cup	AUTO-IGNITION TEMPERATURE	No data available

UPPER EXPLOSIVE
LIMIT

No data available

LOWER
EXPLOSIVE LIMIT

No data available

SECTION 10: STABILITY and REACTIVITY

CHEMICAL STABILITY | Stable under normal conditions.

**CONDITIONS to
AVOID** | None known

**INCOMPATIBLE
MATERIALS
(Reactivity)** | None known.

**INCOMPATIBLE
MATERIALS (Storage
& Transport)** | No information available.

**HAZARDOUS
DECOMPOSITION
PRODUCTS** | None known.

**HAZARDOUS
POLYMERIZATION** | Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE EFFECTS

EYE EFFECTS | No significant eye irritation can be expected from contact with this product.

SKIN EFFECTS | Not expected to be a primary skin irritant.

**ACUTE ORAL
EFFECTS
(INGESTION)** | Not a likely route of entry.

**ACUTE INHALATION
EFFECTS** | No significant health risk anticipated

TARGET ORGANS | No known effects.

CHRONIC EFFECTS

MUTAGENICITY | No information available

TERATOLOGY | No data available for this product.

**REPRODUCTIVE and
DEVELOPMENTAL
TOXICITY**

No information available.

CARCINOGENICITY

CHEMICAL NAME	DATA	AGENCY	LIST
	None of the components of this product are listed on the OSHA Possible or Select Carcinogens Lists.		
	None of the components of this product are listed on the ACGIH Carcinogens List.		
	No limits established for this product by the International Agency for Research on Cancer (IARC).		
	None of the components of this product are listed on the NTP Known or Suspected Carcinogens List.		

LETHAL DOSE (LD50 & LC50) DATA

LD50 ORAL	LD50 Oral Rat : 5.8 - 7.4 g/kg	Average value is 6.6 g/kg
LD50 DERMAL	LD50 Dermal Rat > 5 g/kg	
LC50 INHALATION	No information available	
MEDICAL CONDITIONS AGGRAVATED by EXPOSURE	No information available.	
ROUTES of ENTRY	Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation.	
OTHER TOXICOLOGICAL INFORMATION	Skin Corrosion/Irritation: Human, 10% in petrolatum, 48 hour closed patch test: Non Irritant Skin Sensitization: Human, Maximization test, 10% in petrolatum: Negative	

SECTION 12: ECOLOGICAL INFORMATION

UN GHS AQUATIC TOXICITY CLASSIFICATION INFORMATION

AQUATIC TOXICITY CLASSIFICATION	Not classified as hazardous to aquatic environment
SIGNAL WORD	Not applicable
HAZARD PICTOGRAM	Not applicable
HAZARD STATEMENT	Not applicable

PREVENTION	Not applicable
RESPONSE	Not applicable
DISPOSAL	Not applicable

ADDITIONAL ENVIRONMENTAL INFORMATION

AQUATIC TOXICITY (fish)	No information available
AQUATIC TOXICITY (crustacean)	No information available
AQUATIC TOXICITY (algae)	No information available
ECOTOXICITY INFORMATION	None determined
ENVIRONMENTAL FATE	No data available for this product.
BIOLOGICAL OXYGEN DEMAND (BOD5), g/g	No data available
CHEMICAL OXYGEN DEMAND (COD), g/g	No data available
PERSISTENCE & DEGRADABILITY	No information available.
BIOACCUMULATION	No information available

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DESCRIPTION	Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.
GENERAL DISPOSAL CONSIDERATIONS	Clean up and dispose of waste in accordance with all federal, state, and local environmental regulations.
DISPOSAL of EMPTY CONTAINERS	Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

RCRA COMPONENT	CASRN	DATA
No limits established for this product.		

SECTION 14: TRANSPORT INFORMATION

	US DOT	IATA	IMDG
UN NUMBER	Not applicable	Not applicable	Not applicable
UN PROPER SHIPPING NAME	Non-hazardous material	Non-hazardous material	Non-hazardous material
TRANSPORT HAZARD CLASS(ES)	Not applicable	Not applicable	Not applicable
PACKING GROUP	Not applicable	Not applicable	Not applicable
REPORTABLE QUANTITY (RQ)	No reportable quantity for this product		
EMERGENCY RESPONSE GUIDEBOOK (ERG) REFERENCE	Not applicable		
MARINE POLLUTANT	None		

SECTION 15: REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)	This product is listed on the U.S. EPA TSCA Inventory.
EXPORT NOTIFICATIONS	This product is not subject to TSCA 12B Export Notification requirements.
SIGNIFICANT NEW USE RULE (SNUR)	This material is not subject to a Significant New Use Rule under the US Toxic Substances Control Act.

INTERNATIONAL CHEMICAL INVENTORIES

All of the components of this product are listed on the following inventories:

DSL	Canada	Yes	
NDSL	Canada	No	
ENCS	Japan	Yes	Registry No. 9-137
EINECS	Europe	Yes	Registry No. 203-219-1
ELINCS	Europe	No	
IECSC	China	Yes	

PICCS	Philippines	Yes	
ECL	Korea	Yes	Registry No. KE-10736
AICS	Australia	Yes	
TCSI	Taiwan	Yes	

**EMERGENCY PLANNING and COMMUNITY RIGHT TO KNOW ACT (EPCRA)
40 CFR PART 355, APPENDIX A**

EHS COMPONENTS	CASRN	PERCENT	TPQ POUNDS and RQ
No limits established for this product.			

313 COMPONENTS	CASRN	PERCENT	REPORTING LIMIT
No limits established for this product.			

CERCLA/SARA COMPONENTS	CASRN	PERCENT	REPORTING LIMIT
No limits established for this product.			

EPCRA SECTION 311/312 CLASSIFICATION	ACUTE	No
	CHRONIC	No
	FIRE	No
	PRESSURE	No
	REACTIVE	No

OTHER FEDERAL REGULATIONS

The following components are identified under the Clean Air Act HON-Rule for SOCM I chemicals:

COMPONENT NAME	CASRN
No regulated components	

The following components are identified under the Clean Air Act (VOCs in SOCM I chemicals):

COMPONENT NAME	CASRN
No regulated components	

The following components are identified under the Clean Air Act as Hazardous Air Pollutants (HAP)

COMPONENT NAME	CASRN
No regulated components	

The following components are identified under the Clean Air Act HON-Rule Hazardous Air Pollutants (HAP)

COMPONENT NAME	CASRN
No regulated components	

The following components are identified under the Clean Water Act:

COMPONENT NAME	CASRN	LIST NAME
No limits established for this product.		

STATE RIGHT-TO-KNOW INFORMATION:

COMPONENT NAME	CASRN	STATE	List Name
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If the STATE RIGHT-TO-KNOW INFORMATION table above is empty than none of the components of this product are included on the state right-to-know regulatory lists for Florida, Massachusetts, Michigan, Pennsylvania, or New Jersey.

CALIFORNIA SAFE WATER and TOXIC ENFORCEMENT ACT of 1986 (Proposition 65)

COMPONENT NAME	CASRN	CONCENTRATION [‡]	LIST DATA
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This product contains no components which are listed on California's Proposition 65 lists.

[‡] CONCENTRATIONS EXPRESSED IN % UNLESS UNITS ARE SPECIFIED

SECTION 16: OTHER INFORMATION

To the best of the manufacturer's knowledge, the information contained herein is accurate. However, neither the manufacturer, nor any of its affiliates, make any representations or warranties (expressed or implied), nor assumes any liability (including liability for any direct, incidental, consequential, or other damages) with respect to the accuracy or completeness of the information contained herein. Such information may be (without limitation) invalid if the specified material is used in combination with another, in a particular process, or under unusual conditions. Determination of suitability of any material for any given purpose is the sole responsibility of the user who assumes all risk and responsibility therefore. All materials may present unknown hazards and should be used with appropriate caution. The manufacturer cannot and does not guarantee that the hazards described herein are the only ones that exist.

SDS GENERATED BY	PSIMCOX
SDS VERSION DATE	6/7/2016 8:02:21 AM
SDS APPROVED BY	Patrick B. Simcox Manager – Health, Safety, & Environmental e-mail: psimcox@ksallc.com

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NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD RATINGS

HEALTH	1
FLAMMABILITY	1
REACTIVITY	0

Hazardous Material Identification System (HMIS) Hazard Ratings

HEALTH	1
FLAMMABILITY	1
REACTIVITY	0
PERSONAL PROTECTION	D

The following components of this product are listed on the Canadian WHMIS Ingredient Disclosure List (IDL):

COMPONENT	CASRN	PERCENT	MINIMUM CONCENTRATION
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No regulatory limits established for this product.

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