

HEALTH	2
FLAMMABILITY	1
REACTIVITY	0

Section 1: PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product Name	C-11 Lactone (Gamma Undecalactone), Natural
Product Number	0309100
CAS-No.	104-67-6

1.2 Product Recommended Use **Flavorings**

1.3 Preparation Information

Company	Aurochemicals 7 Nicoll Street Washingtonville, NY 10992- USA
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Telephone	845-496-6065
Fax	845-496-6248

1.4 Emergency Telephone Number 1-800-535-5053
International - 1-352-323-3500 collect

Section 2: HAZARD(s) IDENTIFICATION

2.1 Classification of substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)	Skin irritation (Category 2), H315 Eye irritation (Category 2A), H319 Specific target organ toxicity-single exposure (Category 3), Respiratory System, H335 Acute aquatic toxicity (Category 3), H402 Chronic aquatic toxicity (Category 3), H412
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2.2 GHS Label Elements, Including precautionary statements

Pictogram



Signal Statement

WARNING

Hazard Statement(s)

H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H412	Harmful to aquatic life with long lasting effects

Precautionary Statement(s)

P261	Avoid breathing dust/fume/gas/mist/vapors/spray
P264	Wash skin thoroughly after handling
P271	Use only outdoors or in a well ventilated area

P273	Avoid release to the environment
P280	Wear protective gloves/eye protection/face protection
P302+P352	IF ON SKIN: Wash with plenty of soap and water
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P332+P313	If skin irritation occurs: Get medical advice/attention
P337+P313	If eye irritation persists: Get medical advice/attention
P362	Take off contaminated clothing and wash before reuse
P403+P233	Store in a well ventilated place. Keep container tightly closed
P405	Store locked up
P501	Dispose of contents/container to a approved waste disposal plant.

2.3 HNOC (Hazards not otherwise classified or not covered by GHS) None

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	Gamma Undecalactone Undecanoic γ -lactone Aldehyde C-14
Formula	$C_{11}H_{20}O_2$
Molecular Weight	184.28 g/mol
CAS-No	104-67-6
EC-No.	203-225-4

Hazardous Components

Component	Classification	Concentration
Undecan-4-olide	Skin irritation (2), H315 Eye irritation (2A), H319 Specific target organ toxicity-single exposure (3), Respiratory System, H335 Acute aquatic toxicity (3), H402 Chronic aquatic toxicity (3), H412	90-100%

Section 4: FIRST AID MEASURES

4.1 Description of first aid measures

General Advice	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
Inhalation	Provide fresh air; keep at rest and at a comfortable position to breathe. Consult a physician
Contact with skin:	Remove contaminated clothing. Rinse skin with cool water then wash with mild soap and warm water. Consult a physician
Contact with eyes:	Rinse thoroughly with plenty of water for at least 15 minutes as a precaution.
Ingestion	DO NOT induce vomiting. Never give anything by mouth to an unconscious person.

	Rinse mouth with water. Consult a physician.
Clothing contamination:	Remove contaminated clothing and wash before reuse.
4.2 Most important symptoms and effects both acute and delayed	See section 2.2 and or section 11
4.3 Indication of any immediate medical attention and special treatment needed.	No data available

Section 5: FIREFIGHTING MEASURES

5.1 Extinguishing Media Suitable Extinguishing Media	Use water spray, alcohol resistant foam, dry chemical or carbon dioxide
5.2 Special hazards arising from the substance or mixture	Carbon oxides
5.3 Advice for fire fighters	Wear self contained breathing apparatus for firefighting if necessary. Emits toxic fumes under fire conditions.
5.4 Further information	Use water spray to cool unopened containers.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures	Use personal protective equipment. Avoid breathing vapors. Mist or gas. Ensure adequate ventilation.
6.2 Environment precautions	Prevent further leakage or spillage if safe to do so. Do not allow to enter drains or sewage system. Discharge into the environment must be avoided.
6.3 Methods and materials for containment and clean up	Contain spillage. Soak up inert absorbent material, Wet Sweep up with broom and place in a suitable, closed container for disposal.
6.4 Specific end use(s)	Apart from the uses mentioned in section 1.2, no other specific uses are stipulated.

Section 7: HANDLING AND STORAGE

7.1 Precautions for safe handling	Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition-No smoking. Take measures to prevent the buildup of electrostatic charge.
7.2 Conditions for Safe storage	Keep container tightly closed in a dry, cool and well-ventilated place. Containers which have been opened must be carefully resealed and kept upright to prevent leakage.
7.3 Specific End use(s)	Flavorings

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure Controls

Appropriate Engineering Controls	Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of the workday.
Personal protective equipment	These recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situations of anticipated use by our customers. They should not be construed as offering an approval or any specific use scenario.
Eye/face protection	Safety glasses with side shield conforming to EN 166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
Skin protection	Wear chemically resistant rubber gloves. Use proper glove removal techniques (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use. Wash and dry hands.
Body protection	Complete suit protecting against chemicals should be selected specifically for the work place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier
Respiratory protection	Where risk assessment shows air-purifying respirators are appropriate, use a full face respirator with multi-purpose combination (U) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full faced supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (U) or CEN (EU).
Control of environmental exposure	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a	Appearance	Pale yellow viscous liquid
b	Odor	Strong fruity, peach-like
c	Odor Threshold	No data available
d	pH	No data available
e	Melting Point /Freezing Point	No data available
f	Boiling Point	297°C
g	Flash Point	137°C closed cup
h	Evaporation Rate	No data available
i	Flammability (Solid, Gas)	No data available
j	Upper/lower Flammability Limit	No data available

k	Vapor pressure	No data available
l	Vapor density	No data available
m	Relative density @25°C	0.925-0.964
n	Solubility	No data available
o	Partition coefficient: n-octanol/water	No data available
p	Auto-ignition Temp.	No data available
q	Decomposition Temp.	No data available
r	Viscosity	No data available
s	Explosive properties	No data available
t	Oxidizing properties	No data available
9.2	Other Safety Information	No data available

Section 10: STABILITY AND REACTIVITY

10.1	Reactivity	No data available
10.2	Chemical Stability	Stable under recommended storage conditions
10.3	Possibility of Hazardous reactions	No data available
10.4	Conditions to avoid	No data available
10.5	Incompatible materials	Strong oxidizing agents, strong bases
10.6	Hazardous decomposition products	No data available
10.7	Further Information	Blanket under nitrogen

Section 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity

LD50-Oral- Rat

18,500 mg/kg

Remarks: Behavioral: Somnolence (general depressed activity)

Skin and Appendages: Other; Hair

LC50-Inhalation

No data available

LD50-Dermal-Rabbit

No data available

Skin corrosion/irritation

Rabbit

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ Cell mutagenicity

No data available

Carcinogenicity

IARC

No component of this product, present levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product, present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP

No component of this product, present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA

No component of this product, present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

Teratogenicity

No data available

Specific target organ toxicity-single

May cause respiratory irritation

Safety Data Sheet

exposure (GHS)	No data available
Specific target organ toxicity-repeated exposures (GHS)	No data available
Aspiration Hazards	No data available
Signs and Symptoms of Exposure	To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated
Synergistic effects	No data available
RTECS:	YQ2485000

Section 12: ECOLOGICAL INFORMATION

12.1 Toxicity	<p><u>To Fish:</u> LC50-Oncorhynchus mykiss (rainbow trout) - 569 mg/l - 96h</p> <p><u>To daphnia and other aquatic invertebrates:</u> EC50-Daphnia Magna (Water Flea) - 17.0 mg/l - 48 h</p>
12.2 Persistence and degradability	No data available
12.3 Bioaccumulative potential	No data available
12.4 Mobility in soil	No data available
12.5 Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required / not conducted
12.6 Other adverse effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life with long lasting effects.

Section 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods	
Product:	According to local regulations
Packaging	According to local regulations

Section 14: TRANSPORT INFORMATION

DOT (US)	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

Section 15: REGULATORY INFORMATION

SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
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Safety Data Sheet

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right to Know components

No components are subject to the Massachusetts Right to Know Act

Pennsylvania Right to Know components

Undecan-4-olide CAS# 104-67-6 Rev. Date:

New Jersey Right to Know components

Undecan-4-olide CAS# 104-67-6 Rev. Date:

California Prop. 65 components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16: OTHER INFORMATION

HMIS Rating

Health hazard 2
Chronic Health Hazard
Flammability 1
Reactive Hazard 0

Further Information

Aurochemicals provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Aurochemicals makes no representations or warranties, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, Aurochemicals will not be responsible, nor held liable, for damages resulting from use of or reliance upon this information.

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