SAFETY DATA SHEET (SDS)

Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation (EU) 2020/878 and GHS.

Aldehyde C-14 Natural (Gamma Undecalactone)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identifiers

Parameter	Details
Product Name	Aldehyde C-14 Natural (Gamma Undecalactone)
Product Number	0309100
CAS Number	104-67-6

1.2 Product Recommended Use

Flavorings.

1.3 Supplier Information

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SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of Substance or Mixture

GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Classification	Category	Hazard Code
Skin Irritation	Category 2	H315
Eye Irritation	Category 2A	H319
Specific Target Organ Toxicity – Single Exposure	Category 3	H335
Acute Aquatic Toxicity	Category 3	H402
Chronic Aquatic Toxicity	Category 3	H412

2.2 GHS Label Elements

Signal Word: Warning

Hazard Statements

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

Precautionary Statements

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 an approved waste disposal.

2.3 Hazards Not Otherwise Classified (HNOC)

None.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Parameter	Details
Synonyms	Undecanoic γ-lactone; Aldehyde C-14
Molecular Formula	C11H2002
Molecular Weight	184.28 g/mol
CAS Number	104-67-6
EC Number	203-225-4

Hazardous Components

Component	Classification
Undecan-4-olide	Skin Irritation (2) H315; Eye Irritation (2A) H319; STOT SE (3) H335; Aquatic Acute (3) H402; Aquatic Chronic (3) H412

SECTION 4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice: Consult 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.

Skin Contact: Remove contaminated clothing. Rinse skin with cool water then wash with mild soap and warm water and contact a physician.

Eye Contact: Rinse thoroughly with plenty of water for at least 15 minutes as a precaution and consult a physician.

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 Sections 2.2 and 11.

4.3 Immediate Medical Attention and Special Treatment Needed

No data available.

SECTION 5. FIREFIGHTING MEASURES

5.1 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 Firefighters

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. Evacuate personnel to safe area.

6.2 Environmental Precautions

Prevent further leakage or spillage if safe to do so. Do not allow to enter drains or sewage system.

6.3 Methods and Materials for Containment and Cleaning Up

Contain spillage. Soak up with absorbent material. Sweep up with broom and shovel. Place in a suitable, closed container for disposal.

6.4 Specific End Uses

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.

7.2 Conditions for Safe Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific End Uses

Flavorings.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters

Components contain no substance 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 day.

Personal Protective Equipment

These recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. They should not be construed as offering an approval for any specific use scenario.

Eye/Face Protection

Wear appropriate safety glasses with side shields and face shield. NIOSH tested and approved.

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

Impervious clothing protecting against chemicals should be selected specifically for the workplace, 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 multipurpose combination (US) 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-face supplied-air respirator.

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of Environmental Exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Property	Value
Appearance	Colorless to pale yellow viscous liquid
Odor	Strong fruity, peach-like
Odor Threshold	No data available
pH	No data available
Melting Point / Freezing Point	No data available
Boiling Point	297 °C
Flash Point	>110 °C, closed cup
Evaporation Rate	No data available
Flammability (Solid, Gas)	No data available
Upper/Lower Flammability Limit	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Relative Density at 25 °C	0.938–0.948
Solubility	1 mL is soluble in 5 mL 60% alcohol. Soluble in alcohol, most fixed oils and propylene glycol. Insoluble in glycerol and water.
Partition Coefficient n-Octanol/Water	No data available
Auto-Ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No data available
Oxidizing Properties	No data available

9.2 Other Safety Information

No data available.

SECTION 10. STABILITY AND REACTIVITY

Parameter	Information
10.1 Reactivity	No data available
10.2 Chemical Stability	Stable under recommended storage conditions
10.3 Possibility of Hazardous Reactions	Vapors may form explosive mixture with air
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	No data available

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

Parameter	Information
LD50 – Oral – Rat	18,500 mg/kg
LC50 – Inhalation	No data available
LD50 – Dermal	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
Reproductive Toxicity	No data available
Teratogenicity	No data available
STOT – Single Exposure	Inhalation – May cause respiratory irritation
STOT – Repeated Exposure	No data available
Aspiration Hazards	No data available
Synergistic Effect	No data available
RTECS	YQ2485000

Oral Toxicity Remarks

Behavioral: Somnolence (general depressed activity).

Skin and Appendages: Other: Hair.

Carcinogenicity

IARC: No component of this product present at 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.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Parameter	Information
Toxicity to Fish	LC50 – Oncorhynchus mykiss (rainbow trout): 569 mg/L – 96 h
Toxicity to Daphnia and Other Aquatic Invertebrates	EC50 – Daphnia magna (water flea): 17.0 mg/L – 48 h

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

Transport Mode	Classification
DOT (US)	Not dangerous goods

IMDG	Not dangerous goods
IATA	Not dangerous goods

SECTION 15. REGULATORY INFORMATION

REACH Registration Number

A registration number is not available for this substance as its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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.

New Jersey Right to Know Components

Undecan-4-olide – CAS 104-67-6.

California Proposition 65 Components

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

SECTION 16. OTHER INFORMATION

HMIS Rating

Parameter	Rating
Health Hazard	2
Flammability	1
Physical Hazard	0

Original Supplier Information

Aromology 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.

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