

SAFETY DATA SHEET

1. Identification

Product identifier	APRITONE™	
Other means of identification		
BRI Product Code	410	
FEMA number	3829	
Synonyms	Contains 99+% FEMA/GRAS # 3829 * 2-(3,7-Dimethyl-2,6-octadienyl)cyclopentanone * 2-(3,7-dimethylocta-2,6-dienyl)cyclopentan-1-one * Cyclopentanone, 2-(3,7-dimethyl-2,6-octadienyl)- * Decenyl Cyclopentanone * Geranyl Cyclopentanone * 2-(3,7-dimethyl-2,6-octadien-1-yl)-Cyclopentanone	
Recommended use	flavors and fragrances For Manufacturing Use Only	
Recommended restrictions	Not for use in Tobacco or Nicotine delivery device applications and/or products.	
Manufacturer/Importer/Supplier/Distributor information		
Manufacturer		
Company name	Bedoukian US	
Address	6 Commerce Drive Danbury, CT 06810 United States	
Telephone	1-203-830-4000	
Website	www.bedoukian.com	
E-mail	customerservice@bedoukian.com	
Contact person	Joseph Bania	
Emergency phone number	Chemtrec (North America)	1-800-424-9300
	Chemtrec (International)	1-703-527-3887

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 2
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1
OSHA defined hazards	Not classified.	

Label elements



Signal word	Warning
Hazard statement	Causes skin irritation. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Wash thoroughly after handling. Avoid release to the environment. Wear protective gloves.
Response	If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. Collect spillage.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container in accordance with relevant area regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Contains DI-.alpha.-tocopherol. May produce an allergic reaction.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
2-(3,7-Dimethylocta-2,6-dienyl)cyclopentan-1-one	2-(3,7-Dimethyl-2,6-octadienyl)cyclopentan-1-one 2-(3,7-dimethylocta-2,6-dienyl)cyclopentan-1-one Cyclopentanone, 2-(3,7-dimethyl-2,6-octadienyl)- Decenyl Cyclopentanone Geranyl Cyclopentanone 2-(3,7-dimethyl-2,6-octadien-1-yl)-Cyclopentanone	68133-79-9	99.65
DI- α -tocopherol		10191-41-0	0.1
beta-Damascone	2-Buten-1-one, 1-(2,6,6-trimethyl-1-cyclohexen-1-yl)-, (2E)-	23726-91-2	0.05
Other components below reportable levels			0.2

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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Methods and materials for containment and cleaning up

This product is miscible in water. Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Recommended Packaging: Glass, Plastic, Aluminum or Phenolic Lined Steel. Store tightly sealed under inert gas in a cool, well-ventilated area.

8. Exposure controls/personal protection

Occupational exposure limits

This substance has no PEL, TLV, or other recommended exposure limit.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash fountain and emergency showers are recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection

Face shield is recommended. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Select suitable chemical resistant protective gloves (EN 374) with a protective index 6 (>480min permeation time).

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Liquid.

Color

Pale yellow

Odor

peach-apricot, with jasmine undertones.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

569.3 °F (298.5 °C) OPPTS 830.7220 at ca. 1 atm

Flash point

282 °F (139 °C) Closed Cup

Evaporation rate

Not available.

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Not available.

Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	786.5 Pa OECD 104 at 21.1 °C
Vapor density	7.6 Relative to air; air = 1
Relative density	Not available.
Solubility(ies)	
Solubility (water)	2.27 mg/l OPPTS 830.7840 at 20°C
Partition coefficient (n-octanol/water)	5.57 - 5.66 OECD 117 Result for similar material 2-(3,7-dimethyl-2,6-nonadien-1-yl)-Cyclopentanone.
Auto-ignition temperature	502 °F (261 °C) ASTM E659
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	0.911 - 0.916 g/cm3
Explosive properties	Not explosive.
Flammability class	Combustible IIIB estimated
Molecular formula	C15H24O
Molecular weight	220.35
Oxidizing properties	Not oxidizing.
Specific gravity	0.911 - 0.916 at 25°C

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Not known.

Product	Species	Test Results
APRITONE™		
<u>Acute</u>		
Dermal		
<i>Liquid</i>		
LD50	Rabbit	> 5000 mg/kg Result for similar material. 2-(3,7-dimethyl-2,6-nonadien-1-yl)-Cyclopentanone.

Product	Species	Test Results
Oral <i>Liquid</i> LD50	Rat	> 5000 mg/kg
Components	Species	Test Results
2-(3,7-Dimethylocta-2,6-dienyl)cyclopentan-1-one (CAS 68133-79-9)		
Acute		
Dermal		
<i>Liquid</i> LD50	Rabbit	> 5000 mg/kg Result for similar material. 2-(3,7-dimethyl-2,6-nonadien-1-yl)-Cyclopentanone.
Oral		
<i>Liquid</i> LD50	Rat	> 5000 mg/kg
beta-Damascone (CAS 23726-91-2)		
Acute		
Dermal		
<i>Liquid</i> LD50	Rabbit	> 2000 mg/kg Result for beta-Damascone 50% in Triethyl citrate.
Oral		
<i>Liquid</i> LD50	Rat	2920 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes skin irritation.
Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Irritation Corrosion - Eye
APRITONE™

100 % USEPA OPPTS 870.2400, Result for similar material 2-(3,7-dimethyl-2,6-nonadien-1-yl)-Cyclopentanone.
 Result: No observed effects.
 Species: Rabbit
 Organ: Eye
 Observation Period: 72 hours
 Notes: BRI study

2-(3,7-Dimethylocta-2,6-dienyl)cyclopentan-1-one 100 % USEPA OPPTS 870.2400, Result for similar material 2-(3,7-dimethyl-2,6-nonadien-1-yl)-Cyclopentanone.
 Result: No observed effects.
 Species: Rabbit
 Organ: Eye
 Observation Period: 72 hours
 Notes: BRI study

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Germ cell mutagenicity: Ames test
APRITONE™

OECD 471, Strain WP2uvrA with and without metabolic activation. Vehicle DMSO.
 Result: Not mutagenic.
 Species: Escherichia coli
 OECD 471, Strains TA 98, TA 100, TA 1535, and TA 1537 with and without metabolic activation. Vehicle DMSO.
 Result: Not mutagenic.
 Species: Salmonella typhimurium

Germ cell mutagenicity: Ames test

beta-Damascone

< 250 µg/plate, Strains TA 98 and TA 1537 with and without metabolic activation. Vehicle DMSO. Result for similar material alpha-Damascone.
Result: Not mutagenic.

Species: Salmonella typhimurium

Notes: RIFM

< 500 µg/plate, Strains TA 100 and TA 1535 with and without metabolic activation. Vehicle DMSO. Result for similar material alpha-Damascone.
Result: Not mutagenic.

Species: Salmonella typhimurium

Notes: RIFM

2-(3,7-Dimethylocta-2,6-dienyl)cyclopentan-1-one

OECD 471, Strain WP2uvrA with and without metabolic activation. Vehicle DMSO.
Result: Not mutagenic.

Species: Escherichia coli

OECD 471, Strains TA 98, TA 100, TA 1535, and TA 1537 with and without metabolic activation. Vehicle DMSO.
Result: Not mutagenic.

Species: Salmonella typhimurium

Carcinogenicity Not classifiable as to carcinogenicity to humans.**IARC Monographs. Overall Evaluation of Carcinogenicity**

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.**Specific target organ toxicity - single exposure** Not classified.**Specific target organ toxicity - repeated exposure** Not classified.**Aspiration hazard** Not an aspiration hazard.**Further information** May cause allergic respiratory and skin reactions.**12. Ecological information****Ecotoxicity** Very toxic to aquatic life with long lasting effects.

Product		Species	Test Results
APRITONE™			
Aquatic			
<i>Acute</i>			
Algae	EC50	Algae	2.94 mg/l, 72 hr OECD 201
Crustacea	EC50	Daphnia	0.677 mg/l, 48 hr OECD 202
Components		Species	Test Results
2-(3,7-Dimethylocta-2,6-dienyl)cyclopentan-1-one (CAS 68133-79-9)			
Aquatic			
<i>Acute</i>			
Algae	EC50	Algae	2.94 mg/l, 72 hr OECD 201
Crustacea	EC50	Daphnia	0.677 mg/l, 48 hr OECD 202

* Estimates for product may be based on additional component data not shown.

Persistence and degradability The product is readily biodegradable.**Biodegradability****Percent degradation (Aerobic biodegradation-ready)**

APRITONE™

OECD 301B, 10-day criteria fulfilled.

Result: Readily biodegradable.

Species: activated sludge (adaptation not specified)

Biodegradability

Percent degradation (Aerobic biodegradation-ready)

2-(3,7-Dimethylocta-2,6-dienyl)cyclopentan-1-one

OECD 301B, 10-day criteria fulfilled.

Result: Readily biodegradable.

Species: activated sludge (adaptation not specified)

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

APRITONE™

2-(3,7-Dimethylocta-2,6-dienyl)cyclopentan-1-one

beta-Damascone

5.57 - 5.66 OECD 117, Result for similar material
2-(3,7-dimethyl-2,6-nonadien-1-yl)-Cyclopentanone.

5.57 - 5.66 OECD 117, Result for similar material
2-(3,7-dimethyl-2,6-nonadien-1-yl)-Cyclopentanone.

4.424, US EPA. 2014. Estimation Programs Interface Suite™
for Microsoft® Windows, v 4.11. US EPA, Washington, DC,
USA.

Mobility in soil

No data available.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

UN number

UN3082

UN proper shipping name

Environmentally hazardous substance, liquid, n.o.s.
(2-(3,7-dimethyl-2,6-octadienyl)-Cyclopentanone)

Transport hazard class(es)

Class

9

Subsidiary risk

-

Packing group

III

Environmental hazards

No.

ERG Code

9L

Special precautions for user

Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft

Allowed with restrictions.

Cargo aircraft only

Allowed with restrictions.

IMDG

UN number

UN3082

UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(2-(3,7-dimethyl-2,6-octadienyl)-Cyclopentanone)

Transport hazard class(es)

Class

9

Subsidiary risk

-

Packing group

III

Environmental hazards

Marine pollutant

No.

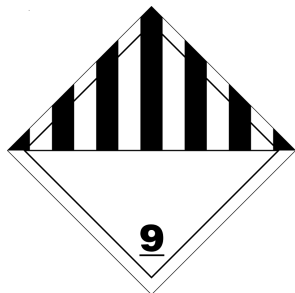
EmS

F-A, S-F

Special precautions for user
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Read safety instructions, SDS and emergency procedures before handling.
Not established.

IATA; IMDG



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region

Inventory name

On inventory (yes/no)*

Australia

Australian Inventory of Chemical Substances (AICS)

Yes

Canada

Domestic Substances List (DSL)

Yes

Canada

Non-Domestic Substances List (NDSL)

No

China

Inventory of Existing Chemical Substances in China (IECSC)

Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Toxic Chemical Substances (TCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

IFRA restriction There is an IFRA guideline regarding this product. Please visit www.ifraorg.org for the full text of the guideline, or contact Bedoukian Research, Inc. for more information.

16. Other information, including date of preparation or last revision

Issue date 21-March-2021

Version # 01

Disclaimer Bedoukian US cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Revision information Hazard(s) identification: Disposal
Physical & Chemical Properties: Multiple Properties
Toxicological Information: Toxicological Property Data