1. Identification

Product identifier 2,4-DECADIEN-1-AL FCC

Other means of identification

- BRI Product Code 364
- CAS number 25152-84-5
- FEMA number 3135
- Synonyms (* Alt. CAS #) CAS: 2363-88-4; 2,4-Decadienal; (2E,4E)-e,e-2,4-Decadienal; trans,trans-2,4-decadien-1-al

Recommended use

Flavors only

Recommended restrictions

For Manufacturing Use Only

Not for use in Tobacco or Nicotine delivery device applications and/or products.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

- Bedoukian Research Inc (BRI)
- 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

- Acute toxicity, dermal Category 4
- Skin corrosion/irritation Category 2
- Serious eye damage/eye irritation Category 2A

Environmental hazards

Not classified.

OSHA defined hazards

Not classified.

Label elements

Signal word Warning

Hazard statement Harmful in contact with skin. Causes skin irritation. Causes serious eye irritation.

Precautionary statement

- Prevention Wash thoroughly after handling. Wear eye protection/face protection. Wear protective gloves/protective clothing.
- Response If on skin: Wash with plenty of water. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
- 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.
3. Composition/information on ingredients

Substances

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-DECADIEN-1-AL FCC</td>
<td>(* Alt. CAS #) CAS: 2363-88-4; 2,4-Decadienal Contains 2,4-Decadienal, (2E,4E)-e,e-2,4-Decadienal trans,trans-2,4-decadien-1-al</td>
<td>25152-84-5</td>
<td>100</td>
</tr>
</tbody>
</table>

Stabilizers

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>synthetic alpha tocopherol</td>
<td></td>
<td>10191-41-0</td>
<td>0.5</td>
</tr>
</tbody>
</table>

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

Composition comments

Occupational Exposure Limits for stabilizers are listed in Section 8.

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. Get medical advice/attention if you feel unwell. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion
Rinse mouth. Get medical advice/attention if you feel unwell.

Most important symptoms/effects, acute and delayed
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. 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 warm. 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. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

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. For personal protection, see section 8 of the SDS.
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.

For waste disposal, see section 13 of the SDS.

Environmental precautions
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. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. 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). Store away from incompatible materials (see Section 10 of the SDS). Recommended Packaging: Glass or Aluminum. 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. Provide eyewash station. 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
Wear appropriate chemical resistant gloves.

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

Other

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
Yellow

Odor
powerful fatty, somewhat citrus note.

Odor threshold
Not available.

pH
Not available.

Melting point/freezing point
Not available.

Initial boiling point and boiling range

Flash point
225 °F (107 °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 0.06 mmHg at 20°C; US EPA. 2014. Estimation Programs Interface Suite™ for Microsoft® Windows, v 4.11. US EPA, Washington, DC, USA.
Vapor density Not available.
Relative density Not available.
Solubility(ies)
Solubility (water) Not available.
Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity Not available.
Other information
Density 0.866 - 0.871 g/cm³
Explosive properties Not explosive.
Flammability class Combustible IIIB estimated
Molecular formula C10H16O
Molecular weight 152.23
Oxidizing properties Not oxidizing.
Specific gravity 0.866 - 0.871 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 No adverse effects due to inhalation are expected.
Skin contact Harmful in contact with skin. Causes skin irritation.
Eye contact Causes serious eye irritation.
Ingestion Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects
Acute toxicity Harmful in contact with skin.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-DECADIEN-1-AL FCC (CAS 25152-84-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
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<tr>
<td>Liquid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>1250 - 2500 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 5000 mg/kg</td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.
### Skin corrosion/irritation

Causes skin irritation.

**Irritation Corrosion - Skin**

| 2,4-DECADIEN-1-AL FCC | 100 % Patch test, Classified as irritant based on average scores (erythema 2.3, edema 2.5). Result: Irritation noted. Species: Rabbit Organ: Skin Test Duration: 4 hours Observation Period: 7 days Notes: RIFM 5 % Patch test, Vehicle Petrolatum. Result: No irritation observed. Species: Human Organ: Skin Notes: RIFM |

### Serious eye damage/eye irritation

Causes serious eye irritation.

**Irritation Corrosion - Eye**

| 2,4-DECADIEN-1-AL FCC | 0.5 %, Irritation clear on observation days 3 and 4. Vehicle Ethanol SDA 39C. Result: Irritation noted. Species: Rabbit Organ: Eye Observation Period: 7 days Severity: mild |

### Respiratory or skin sensitization

Not a respiratory sensitizer. This product is not expected to cause skin sensitization.

#### Skin sensitization

| 2,4-DECADIEN-1-AL FCC | 5 % Patch test, Vehicle Petrolatum. Result: Not sensitizing. Species: Human Organ: Skin Notes: RIFM |

### Germ cell mutagenicity

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

### Carcinogenicity

Not classifiable as to carcinogenicity to humans.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Not listed.


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.

### Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

### Persistence and degradability

No data is available on the degradability of this product.

### Bioaccumulative potential


### 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. 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

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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

Not established.

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.
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

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Toxic Chemical Substances (TCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*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**: 25-May-2015
- **Revision date**: 27-April-2023
- **Version #**: 07

**Disclaimer**
Bedoukian Research Inc (BRI) 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.