



# 4-ANDROSTENE-3,17-DIONE (2,3,4-13C3, 98%+)

## Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 01/04/2014

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Version: 2.0

**CLM-9135**

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form : Substance  
Substance name : 4-ANDROSTENE-3,17-DIONE (2,3,4-13C3, 98%+)  
EC no : 200-554-5 (Unlabeled)  
CAS No : 327048-86-2  
Product code : CLM-9135  
Formula : C16\*C3H26O2  
Synonyms : Androstenedione

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### 1.2.1. Relevant identified uses

Main use category : Professional use  
Industrial/Professional use spec : For professional use only

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.  
50 Frontage Road  
Andover, MA 01810  
USA

USA: 1-800-322-1174 Int: 1-978-749-8000  
[cilsales@isotope.com](mailto:cilsales@isotope.com) [www.isotope.com](http://www.isotope.com)

### Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)  
International: 1-703-741-5970 (24 hours)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4 (Oral) H302  
Carc. 2 H351  
Lact. H362  
Repr. 1A H360

Full text of H-statements: see section 16

#### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xn; R22  
Carc.Cat.3; R40  
Repr.Cat.1; R60  
Repr.Cat.1; R61

Full text of R-phrases: see section 16

#### GHS-US classification

Acute Tox. 4 (Oral) H302  
Carc. 2 H351  
Lact. H362  
Repr. 1A H360  
Aquatic Acute 2 H401

#### Adverse physicochemical, human health and environmental effects

No additional information available

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### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS08

GHS07

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H302 - Harmful if swallowed  
H351 - Suspected of causing cancer (in contact with skin, if inhaled, if swallowed)  
H360 - May damage fertility. May damage the unborn child (in contact with skin, if inhaled, if swallowed)  
H362 - May cause harm to breast-fed children

Precautionary statements (CLP) :

P260 - Do not breathe dust, fume, gas, mist, spray, vapours  
P263 - Avoid contact during pregnancy/while nursing  
P264 - Wash Both hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P280 - Wear protective clothing, protective gloves  
P301+P312 - IF SWALLOWED: Call a doctor, a POISON CENTER if you feel unwell  
P308+P313 - IF exposed or concerned: Get medical advice/attention  
P330 - Rinse mouth

#### GHS-US labelling

Hazard pictograms (GHS-US) :



GHS08

GHS07

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H302 - Harmful if swallowed  
H351 - Suspected of causing cancer (Dermal, Inhalation, oral)  
H360 - May damage fertility or the unborn child (Dermal, Inhalation, oral)  
H362 - May cause harm to breast-fed children  
H401 - Toxic to aquatic life

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P260 - Do not breathe dust, fume, gas, spray, mist, vapours  
P263 - Avoid contact during pregnancy/while nursing  
P264 - Wash Both hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P273 - Avoid release to the environment  
P280 - Wear protective clothing, protective gloves  
P301+P312 - IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell  
P308+P313 - IF exposed or concerned: Get medical advice/attention  
P330 - If swallowed, rinse mouth  
P405 - Store locked up  
P501 - Dispose of contents/container to Comply with applicable regulations

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Name	Product identifier	%	Classification according to Directive 67/548/EEC
4-ANDROSTENE-3,17-DIONE (2,3,4-13C3, 98%+) (Main constituent)	(CAS No) 327048-86-2 (EC no) 200-554-5 (Unlabeled)	100	Xn; R22 Carc.Cat.3; R40 Repr.Cat.1; R60 Repr.Cat.1; R61

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
4-ANDROSTENE-3,17-DIONE (2,3,4-13C3, 98%+) (Main constituent)	(CAS No) 327048-86-2 (EC no) 200-554-5 (Unlabeled)	100	Acute Tox. 4 (Oral), H302 Carc. 2, H351 Lact., H362 Repr. 1A, H360

Full text of R- and H-statements: see section 16

Name	Product identifier	%	GHS-US classification
4-ANDROSTENE-3,17-DIONE (2,3,4-13C3, 98%+) (Main constituent)	(CAS No) 327048-86-2	100	Acute Tox. 4 (Oral), H302 Carc. 2, H351 Lact., H362 Repr. 1A, H360 Aquatic Acute 2, H401

Full text of H-statements: see section 16

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
- First-aid measures after inhalation : If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
- First-aid measures after skin contact : Wash off with soap and plenty of water. Consult a physician.
- First-aid measures after eye contact : Flush eyes with water as a precaution.
- First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May be harmful if inhaled. Causes respiratory tract irritation.
- Symptoms/injuries after skin contact : May be harmful if absorbed through skin. Causes skin irritation.
- Symptoms/injuries after eye contact : Causes serious eye irritation.
- Symptoms/injuries after ingestion : Harmful if swallowed.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information 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

No additional information available

### 5.3. Advice for firefighters

- Firefighting instructions : Wear self contained breathing apparatus for fire fighting if necessary.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

- Emergency procedures : Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 6.3. Methods and material for containment and cleaning up

- For containment : Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 6.4. Reference to other sections

No additional information available

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### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Additional hazards when processed : Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Keep container tightly closed in a dry and well-ventilated place.
- Storage conditions : Store at room temperature away from light and moisture.

#### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

#### 8.2. Exposure controls

- Appropriate engineering controls : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
- Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



- Materials for protective clothing : Wear suitable protective clothing and gloves.
- Hand protection : Wear suitable protective clothing and gloves.
- Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.
- Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Respiratory protection : When appropriate, use NIOSH/CEN approved respirator.
- Environmental exposure controls : 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

- Physical state : Solid
- Appearance : Crystalline, Powder.
- Molecular mass : 289.39 g/mol (Labeled)
- Colour : white.
- Odour : No data available
- Odour threshold : No data available
- pH : No data available
- Relative evaporation rate (butylacetate=1) : No data available
- Melting point : 170 - 171 °C (338 - 340 °F) - lit.
- Freezing point : No data available
- Boiling point : No data available
- Flash point : No data available
- Auto-ignition temperature : No data available
- Decomposition temperature : 200 °C (392 °F)
- Flammability (solid, gas) : This product is not flammable. - Flammability (solids)
- Vapour pressure : No data available
- Relative vapour density at 20 °C : No data available
- Relative density : 1.18 g/cm<sup>3</sup> at 20 °C (68 °F)
- Solubility : Water: 0.066 g/l at 20 °C (68 °F) - slightly soluble
- Log Pow : 2.7 at 25 °C (77 °F)
- Log Kow : No data available
- Viscosity, kinematic : No data available
- Viscosity, dynamic : No data available

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Explosive properties : No data available  
Oxidising properties : No data available  
Explosive limits : No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Stable if stored under recommended conditions.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

Avoid air and moisture.

### 10.5. Incompatible materials

Strong oxidizing agents.

### 10.6. Hazardous decomposition products

Carbon oxides (CO, CO2).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed.

4-ANDROSTENE-3,17-DIONE (2,3,4-13C3, 98%+) (327048-86-2)	
LD50 oral rat	500 - 1000 mg/kg - male (OECD Test Guideline 423)
LD50 dermal rat	> 2000 mg/kg - male and female (OECD Test Guideline 402)
ATE CLP (oral)	500.000 mg/kg bodyweight

Skin corrosion/irritation : Skin - Rat Result: No skin irritation - 24 h (OECD Test Guideline 404)  
No data available

Serious eye damage/irritation : Eyes - Rabbit Result: No eye irritation (OECD TEST Guideline 405)  
No data available

Respiratory or skin sensitisation : Maximisation Test - Rabbit Result: Does not cause skin sensitisation. (OECD Test Guideline 406)  
No data available

Germ cell mutagenicity : Hamster - fibroblast Result: Negative. OECD Test Guideline 474. Rat - male Result: negative

Carcinogenicity : Carcinogenicity - Mouse - male and female - Oral hepatocellular carcinoma

Reproductive toxicity : Not available

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Repeated dose toxicity - Rat - male and female - Oral - no observed adverse effect level - 5 mg/kg

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Symptoms/injuries after inhalation : May be harmful if inhaled. Causes respiratory tract irritation.

Symptoms/injuries after skin contact : May be harmful if absorbed through skin. Causes skin irritation.

Symptoms/injuries after eye contact : Causes serious eye irritation.

Symptoms/injuries after ingestion : Harmful if swallowed.

## SECTION 12: Ecological information

### 12.1. Toxicity

4-ANDROSTENE-3,17-DIONE (2,3,4-13C3, 98%+) (327048-86-2)	
LC50 fish 1	8.609 mg/l semi-static test LC50 - Danio rerio (Zebra fish) - 96 h (OECD Test Guideline 203)
EC50 Daphnia 1	21.4 mg/l static test EC50 - Daphnia magna (Water flea) - 48 h (OECD Test Guideline 202)
EC50 other aquatic organisms 1	>= 49.5 mg/l Growth inhibition EC10 - Pseudomonas putida - 16 h (DIN 38 412 Part 8)
ErC50 (algae)	8.2 mg/l static test EC50 - Pseudokirchneriella subcapitata - 72 h (OECD Test Guideline 201)

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### 12.2. Persistence and degradability

#### 4-ANDROSTENE-3,17-DIONE (2,3,4-13C3, 98%+) (327048-86-2)

Persistence and degradability	aerobic - Exposure time 29 d.
Biodegradation	79 % - Readily biodegradable (OECD Test Guideline 301B)

### 12.3. Bioaccumulative potential

#### 4-ANDROSTENE-3,17-DIONE (2,3,4-13C3, 98%+) (327048-86-2)

Log Pow	2.7 at 25 °C (77 °F)
Bioaccumulative potential	Not available.

### 12.4. Mobility in soil

#### 4-ANDROSTENE-3,17-DIONE (2,3,4-13C3, 98%+) (327048-86-2)

Ecology - soil	Not available.
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### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

Other adverse effects : An environmental hazard cannot be excluded in the event of an unprofessional handling or disposal. Toxic to aquatic life.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and Local environmental control regulations.

Waste disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Ecology - waste materials : Dispose of as unused product.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

Not applicable

### 14.2. UN proper shipping name

Not applicable

### 14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Not dangerous goods.

#### Overland transport

No additional information available

#### Transport by sea

No additional information available

#### Air transport

No additional information available

### 14.4. Environmental hazards

Other information : No supplementary information available.

### 14.5. Special precautions for user

Special transport precautions : Not dangerous goods.

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

Not applicable

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### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

4-ANDROSTENE-3,17-DIONE (2,3,4-13C3, 98%+) (327048-86-2)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.

#### 15.2. International regulations

##### CANADA

No additional information available

##### 15.2.1. National regulations

No additional information available

#### 15.3. US State regulations

4-ANDROSTENE-3,17-DIONE (2,3,4-13C3, 98%+)(327048-86-2)	
State or local regulations	U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List WARNING! This product contains a chemical known by the state of California to cause cancer.

### SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

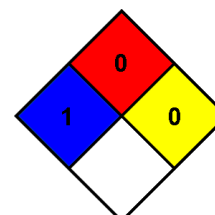
Full text of R-, H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Carc. 2	Carcinogenicity, Category 2
Lact.	Reproductive toxicity, Additional category, Effects on or via lactation
Repr. 1A	Reproductive toxicity, Category 1A
H302	Harmful if swallowed
H351	Suspected of causing cancer
H360	May damage fertility or the unborn child
H362	May cause harm to breast-fed children
R22	Harmful if swallowed
R40	Limited evidence of a carcinogenic effect
R60	May impair fertility
R61	May cause harm to the unborn child
Xn	Harmful

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



#### HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

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CIL Multi-Solvent Mixture SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*