

According to Regulation (EC) No 1907/2006

# All-trans-Retinol (Vitamin A Alcohol)



Version number: 2  
Issued: 2023-09-08  
Replaces SDS: 2019-10-10

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

### 1.1. Product identifier

**Trade name**

All-trans-Retinol (Vitamin A Alcohol)

**Name of the chemical**

All-trans-Retinol (Vitamin A Alcohol)

**CAS number**

68-26-8

**EC number**

200-683-7

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

**Relevant identified uses**

Research and development.

**Not suitable for use in**

Not suitable for human consumption or veterinary purposes.

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

**Supplier**

Molekula Group

Street address

Molekula Ltd, Lingfield Way, Darlington,  
DL1 4XX Darlington  
United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

**Contact person**

Kevin Banks

**Email address**

+44 (0) 7769276927

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## 1.4. Emergency telephone number

### Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

#### Classification

Hazardous to the aquatic environment — Chronic hazard category 4

Skin sensitisation, hazard category 1

Reproductive toxicity, hazard category 1B

Eye irritation, hazard category 2

#### Hazard statements

H317, H319, H360, H413

### 2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

#### Hazard pictograms



#### Signal word

Danger

#### Hazard statements

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H360 May damage fertility or the unborn child.

H413 May cause long lasting harmful effects to aquatic life.

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## Precautionary statements

P201 Obtain special instructions before use.  
 P202 Do not handle until all safety precautions have been read and understood.  
 P261 Avoid breathing vapour.  
 P264 Wash skin thoroughly after handling.  
 P272 Contaminated work clothing should not be allowed out of the workplace.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P302 + P352 IF ON SKIN: Wash with plenty of water/.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P308 + P313 IF exposed or concerned: Get medical advice/attention.  
 P337 + P313 If eye irritation persists: Get medical advice/attention.  
 P405 Store locked up.  
 P362 + P364 Take off contaminated clothing and wash it before reuse.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.  
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

## 2.3. Other hazards

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrases M factor acute M factor chronic	Note
All-trans-Retinol (Vitamin A Alcohol)	68-26-8 200-683-7 - -	100%	Skin Sens. 1, Eye Irrit. 2, Aquatic Chronic 4, Repr. 1B	H317, H319, H360FD, H413 - -	-

## Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

Get medical attention if any discomfort continues. Show this Safety Data Sheet (SDS) to medical personnel.

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## Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

## Skin contact

IF ON SKIN: Wash with plenty of water. Continue to rinse for at least 15 minutes and seek medical attention. Get medical advice/attention if you feel unwell.

## Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

## Ingestion

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

## Information for doctors

First aiders/ medical personnel need to protect themselves.

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

The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

## Inhalation

Single exposure may cause the following adverse effects: Upper respiratory irritation. Difficulty in breathing.

## Skin contact

Single exposure may cause the following adverse effects: Severe skin irritation.

## Eye contact

Single exposure may cause the following adverse effects: Severe irritation.

## Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. Nausea, vomiting.

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

Treat symptomatically. No special treatment requirement.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

#### Unsuitable extinguishing media

No specific fire fighting procedure given.

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## 5.2. Special hazards arising from the substance or mixture

Specific hazards: None.

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO).

## 5.3. Advice for firefighters

### Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

## SECTION 6: Accidental release measures

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

Avoid breathing dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. Avoid contact with skin and eyes. For personal protection, see section 8.

### 6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

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

Collect spillage with shovel, broom or the like and reuse, if possible. Dispose of large amounts of spillage/waste according to agreement with local authorities.

### 6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Preventive handling precautions

For precautions see section 2.2.

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

Store in a dry place. Store in a closed container.

Air and moisture sensitive. Store under inert gas. Light sensitive.

Recommended storage temperature: -20 to -15°C (-4 to 5°F)

### 7.3. Specific end use(s)

No specific usage precautions noted.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No data available

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## 8.2. Exposure controls

### Eye / face protection

Wear eye protection.

### Hand protection

Wear protective gloves. Recommended gloves: Nitrile.

Glove Thickness: 0.11mm

Breakthrough time: 8 hours

Always inspect gloves before use. If signs of wear and tear are noticed then the gloves should be replaced.

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.

### Other skin protection

Wash skin thoroughly after handling.

### Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

### Environmental exposure controls

Avoid discharge into drains.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Physical state

Solid

#### Colour

Yellowish.

#### Odour

No data available

#### Melting point / freezing point

61 - 63 °C

#### Boiling point or initial boiling point and boiling range

No data available

#### Flammability

No data available

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## Lower and upper explosion limit

No data available

## Flash point

No data available

## Auto-ignition temperature

No data available

## Decomposition temperature

No data available

## pH

No data available

## Kinematic viscosity

No data available

## Solubility

No data available

## Partition coefficient n-octanol/water

No data available

## Vapour pressure

No data available

## Density and/or relative density

1.1

## Relative vapour density

No data available

## Particle characteristics

No data available

## 9.2. Other information

No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The following applies in general to flammable organic substances and mixtures: when finely distributed, the risk of a dust explosion may be assumed.

### 10.2. Chemical stability

Stable under the prescribed storage conditions.

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## 10.3. Possibility of hazardous reactions

Violent reactions possible with:  
 Strong oxidising agents.

## 10.4. Conditions to avoid

No data available

## 10.5. Incompatible materials

Strong oxidising agents.

## 10.6. Hazardous decomposition products

See section 5.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Test animals
All-trans-Retinol (Vitamin A Alcohol) 68-26-8 / 200-683-7	Acute Toxicity (Oral LD50):	9,560mg/kg	Rat

#### Skin corrosion/irritation

Product / Substance name CAS / EC no.	Result	Duration of exposure	Species
All-trans-Retinol (Vitamin A Alcohol) 68-26-8 / 200-683-7	Negative.	4 hours	Rabbit

#### Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result	Duration of exposure	Species
All-trans-Retinol (Vitamin A Alcohol) 68-26-8 / 200-683-7	Irritation to eyes, reversing within 7 days.	24 hours	Rabbit

#### Respiratory or skin sensitisation



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Product / Substance name CAS / EC no.	Result	Test type	Species
All-trans-Retinol (Vitamin A Alcohol) 68-26-8 / 200-683-7	Positive.	Buehler Test	Guinea Pig

## Aspiration hazard

Based on available data, the classification criteria are not met.

## 11.2. Information on other hazards

No data available

## SECTION 12: Ecological information

### 12.1. Toxicity

#### Acute fish toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
All-trans-Retinol (Vitamin A Alcohol) 68-26-8 / 200-683-7	LC50	316.23mg/l	96 hours	Brachydanio rerio (Zebra Fish)

#### Acute algae toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
All-trans-Retinol (Vitamin A Alcohol) 68-26-8 / 200-683-7	ErC50	152.94mg/l	72 hours	Desmodesmus subspicatus (green algae)

#### Acute crustacean toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
All-trans-Retinol (Vitamin A Alcohol) 68-26-8 / 200-683-7	EC50	> 100mg/l	48 hours	Daphnia magna

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## Micro-/macro organism toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
All-trans-Retinol (Vitamin A Alcohol) 68-26-8 / 200-683-7	EC50	> 1,000mg/l	3 hours	Activated sludge.

## 12.2. Persistence and degradability

### Persistence and degradability

Product / Substance name CAS / EC no.	Type of test	Duration	Result
All-trans-Retinol (Vitamin A Alcohol) 68-26-8 / 200-683-7	aerobic	28 days	80 - 90% - The product is readily biodegradable.

## 12.3. Bioaccumulative potential

No data available

## 12.4. Mobility in soil

No data available

## 12.5. Results of PBT and vPvB assessment

No data available

## 12.6. Endocrine disrupting properties

No data available

## 12.7. Other adverse effects

No data available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### Disposal considerations

Dispose of contents/container in accordance with local/regional/national/international regulations.

## SECTION 14: Transport information

### 14.1. UN number

Not applicable

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## 14.2. UN proper shipping name

Not applicable

## 14.3. Transport hazard class(es)

Not applicable

## 14.4. Packing group

Not applicable

## 14.5. Environmental hazards

Not applicable

## 14.6. Special precautions for user

Not applicable

## 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU regulations

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

#### National regulations

No data available

### 15.2. Chemical safety assessment

No data available

## SECTION 16: Other information

### Phrase meaning

Aquatic Chronic 4 - Hazardous to the aquatic environment — Chronic hazard category 4

Skin Sens. 1 - Skin sensitisation, hazard category 1

Repr. 1B - Reproductive toxicity, hazard category 1B

Eye Irrit. 2 - Eye irritation, hazard category 2

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H360 May damage fertility or the unborn child.

H360FD May damage fertility. May damage the unborn child

H413 May cause long lasting harmful effects to aquatic life.