

# Safety data sheet

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BASF Safety data sheet according to Regulation (EC) No. 1907/2006 as amended from time to time.

Date / Revised: 19.11.2015

Version: 5.0

Product: **Tetrahydrogeraniol**

(ID no. 30168017/SDS\_GEN\_EU/EN)

Date of print 20.11.2015

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

### 1.1. Product identifier

## Tetrahydrogeraniol

Chemical name: 3,7-Dimethyloctan-1-ol

CAS Number: 106-21-8

REACH registration number: 01-2119955073-40-0000

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

Relevant identified uses: Chemical, Chemical for detergents, Cosmetic and oral care chemical, flavoring substance

Recommended use: Chemical, flavoring substance, Chemical for detergents, Cosmetic and oral care chemical

For the detailed identified uses of the product see appendix of the safety data sheet.

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

Company:

BASF SE

67056 Ludwigshafen

GERMANY

Operating Division Nutrition and Health

Telephone: +49 621 60-48434

E-mail address: EN-global-safety-data@basf.com

### 1.4. Emergency telephone number

International emergency number:

Telephone: +49 180 2273-112

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## SECTION 2: Hazards Identification

### 2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

Skin Corr./Irrit. 2  
Eye Dam./Irrit. 2  
Aquatic Chronic 2

H319, H315, H411

For the classifications not written out in full in this section the full text can be found in section 16.

### 2.2. Label elements

Globally Harmonized System, EU (GHS)

Pictogram:



Signal Word:  
Warning

Hazard Statement:

H319	Causes serious eye irritation.
H315	Causes skin irritation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P280	Wear protective gloves and eye/face protection.
P273	Avoid release to the environment.
P264	Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303 + P352	IF ON SKIN (or hair): Wash with plenty of soap and water.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P391	Collect spillage.
P337 + P311	If eye irritation persists: Call a POISON CENTER or doctor/physician.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Precautionary Statements (Disposal):

P501 Dispose of contents/container to hazardous or special waste collection point.

According to Regulation (EC) No 1272/2008 [CLP]

Hazard determining component(s) for labelling: TETRAHYDROGERANIOL

### **2.3. Other hazards**

According to Regulation (EC) No 1272/2008 [CLP]

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

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## **SECTION 3: Composition/Information on Ingredients**

### **3.1. Substances**

Chemical nature

3,7-Dimethyloctan-1-ol

CAS Number: 106-21-8

EC-Number: 203-374-5

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

### **3.2. Mixtures**

Not applicable

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## **SECTION 4: First-Aid Measures**

### **4.1. Description of first aid measures**

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:

Wash thoroughly with soap and water.

On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

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

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

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### **SECTION 5: Fire-Fighting Measures**

#### **5.1. Extinguishing media**

Suitable extinguishing media:  
foam, dry powder, carbon dioxide

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

harmful vapours

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

#### **5.3. Advice for fire-fighters**

Special protective equipment:

Wear a self-contained breathing apparatus.

Further information:

Fire debris must be disposed of in accordance with official regulations.

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### **SECTION 6: Accidental Release Measures**

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

Ensure adequate ventilation.

#### **6.2. Environmental precautions**

Do not discharge into drains/surface waters/groundwater.

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

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).

#### **6.4. Reference to other sections**

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

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## SECTION 7: Handling and Storage

### 7.1. Precautions for safe handling

Ensure thorough ventilation of stores and work areas.

No special measures necessary provided product is used correctly.

Protection against fire and explosion:

Take precautionary measures against static discharges.

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

Suitable materials for containers: Aluminium, Stove-lacquer RDL 50

Further information on storage conditions: Containers should be stored tightly sealed in a dry place.

Protect against heat. Protect contents from the effects of light.

### 7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

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## SECTION 8: Exposure Controls/Personal Protection

### 8.1. Control parameters

Components with occupational exposure limits

| No occupational exposure limits known.

PNEC

freshwater: 0.0036 mg/l

marine water: 0.00036 mg/l

intermittent release: 0.036 mg/l

STP: 450 mg/l

sediment (freshwater): 0.134 mg/kg

sediment (marine water): 0.0134 mg/kg

soil: 0.0246 mg/kg

oral (secondary poisoning):

No PNEC value available.

DNEL

worker:

Long-term exposure- systemic effects, Inhalation: 5.3 mg/m<sup>3</sup>

worker:

Long-term exposure- systemic effects, dermal: 1.5 mg/kg

consumer:

Long-term exposure- systemic effects, Inhalation: 1.3 mg/m<sup>3</sup>

consumer:

Long-term exposure- systemic effects, dermal: 0.75 mg/kg

consumer:

Long-term exposure- systemic effects, oral: 0.75 mg/kg

**8.2. Exposure controls**Personal protective equipment

Respiratory protection:

Suitable respiratory protection for higher concentrations or long-term effect: Gas filter for gases/vapours of organic compounds (boiling point &gt;65 °C, e. g. EN 14387 Type A)

Hand protection:

Suitable chemical resistant safety gloves (EN 374) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc. Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Handle in accordance with good industrial hygiene and safety practice.

**SECTION 9: Physical and Chemical Properties****9.1. Information on basic physical and chemical properties**

Form:	liquid	
Colour:	colourless, clear	
Odour:	flowery	
Odour threshold:	< 100 ppm	
pH value:	not applicable	
Melting point:	< -100 °C	(OECD Guideline 102)
glass transition temperature:	-116 °C	(OECD Guideline 102)
Boiling point:	218 °C (1,013.25 hPa) Extrapolated value	(measured)
Flash point:	95 °C Literature data.	
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	
Flammability:	not flammable	(other)
Lower explosion limit:	For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.	
Upper explosion limit:	For liquids not relevant for classification and labelling.	
Ignition temperature:	248 °C	(Directive 92/69/EEC, A.15)
Vapour pressure:	0.0144 hPa (20 °C) Extrapolated value	(measured)
Density:	0.8280 g/cm <sup>3</sup> (20 °C, 1,013 hPa)	(OECD Guideline 109)
	0.8143 g/cm <sup>3</sup> (40 °C, 1,013 hPa)	(OECD Guideline 109)
Relative density:	0.83 (20 °C) Literature data.	
Solubility in water:	64 mg/l (20 °C, pH 7.1)	(OECD Guideline 105)
Partitioning coefficient n-octanol/water (log Kow):	3.9 (35 °C)	(OECD Guideline 117)
Self ignition:	not self-igniting	Test type: Spontaneous self-ignition at room-temperature.
Thermal decomposition:	450 °C, > 190 J/g, (DSC (OECD 113))	

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Viscosity, dynamic:	15.3 mPa.s (20 °C) The value was determined by calculation from the detected kinematic viscosity.	(OECD 114)
	6.7 mPa.s (40 °C) The value was determined by calculation from the detected kinematic viscosity.	(OECD 114)
Viscosity, kinematic:	18.4 mm <sup>2</sup> /s (20 °C)	(OECD 114)
	8.2 mm <sup>2</sup> /s (40 °C)	(OECD 114)
Explosion hazard:	Based on the chemical structure there is no indicating of explosive properties.	
Fire promoting properties:	Based on its structural properties the product is not classified as oxidizing.	

## 9.2. Other information

Self heating ability:	It is not a substance capable of spontaneous heating.	
pKA:	Study scientifically not justified., The substance does not dissociate.	
Adsorption/water - soil:	KOC: 70.79; log KOC: 1.85	(calculated)
Surface tension:	Based on chemical structure, surface activity is not to be expected.	
Grain size distribution:	The substance / product is marketed or used in a non solid or granular form.	

## SECTION 10: Stability and Reactivity

### 10.1. Reactivity

Corrosion to metals:	No corrosive effect on metal.	
Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.

### 10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

### 10.3. Possibility of hazardous reactions

No hazardous reactions when stored and handled according to instructions.



#### 10.4. Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame.

#### 10.5. Incompatible materials

Substances to avoid:

acids, bases

#### 10.6. Hazardous decomposition products

No hazardous decomposition products if stored and handled as prescribed/indicated.

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### SECTION 11: Toxicological Information

#### 11.1. Information on toxicological effects

##### Acute toxicity

Assessment of acute toxicity:

Virtually nontoxic after a single ingestion. Of low toxicity after short-term skin contact.

Experimental/calculated data:

LD50 rat (oral): > 5,000 mg/kg (other)

LD50 rabbit (dermal): 2,4 mL/kg (other)

##### Irritation

Assessment of irritating effects:

Skin contact causes irritation. Eye contact causes irritation. The product has not been fully tested.

The statements have been derived in parts from products of a similar structure or composition.

Experimental/calculated data:

Skin corrosion/irritation rabbit: Irritant. (OECD Guideline 404)

Serious eye damage/irritation rabbit: Irritant. (BASF-Test)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

##### Respiratory/Skin sensitization

Assessment of sensitization:

Skin sensitizing effects were not observed in animal studies.

Experimental/calculated data:

guinea pig: Non-sensitizing. (other)

#### Germ cell mutagenicity

##### Assessment of mutagenicity:

No mutagenic effect was found in various tests with bacteria and mammalian cell culture. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

#### Carcinogenicity

##### Assessment of carcinogenicity:

No data available concerning carcinogenic effects.

#### Reproductive toxicity

##### Assessment of reproduction toxicity:

The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

#### Developmental toxicity

##### Assessment of teratogenicity:

Based on available Data, the classification criteria are not met. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

#### Specific target organ toxicity (single exposure)

##### Assessment of STOT single:

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

#### Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

##### Assessment of repeated dose toxicity:

Repeated exposure to high doses of the substance causes reversible liver changes in rodents. According to present knowledge, these effects do not occur in man. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

#### Aspiration hazard

No aspiration hazard expected.

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## **SECTION 12: Ecological Information**

### **12.1. Toxicity**

Assessment of aquatic toxicity:

Acutely toxic for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

**Toxicity to fish:**

LC50 (96 h) approx. 22 mg/l, *Leuciscus idus* (DIN 38412 Part 15, static)

The details of the toxic effect relate to the nominal concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

**Aquatic invertebrates:**

EC50 (48 h) 3.6 mg/l, *Daphnia magna* (Directive 92/69/EEC, C.2, static)

The statement of the toxic effect relates to the analytically determined concentration.

**Aquatic plants:**

EC50 (72 h) 21.6 mg/l (growth rate), *Scenedesmus subspicatus* (DIN 38412 Part 9, static)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

EC10 (72 h) 9.5 mg/l (growth rate), *Scenedesmus subspicatus* (DIN 38412 Part 9, static)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

**Microorganisms/Effect on activated sludge:**

EC10 (0.5 h) 450 mg/l, *Pseudomonas putida* (DIN 38412 Part 27 (draft), aquatic)

The details of the toxic effect relate to the nominal concentration. The product has low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested.

Analogous: Assessment derived from products with similar chemical character.

**Chronic toxicity to fish:**

No data available regarding toxicity to fish.

**Chronic toxicity to aquatic invertebrates:**

Study not necessary due to exposure considerations. No data available regarding toxicity to daphnids.

**Assessment of terrestrial toxicity:**

No data available concerning terrestrial toxicity.

**Soil living organisms:**

No data available.

**Terrestrial plants:**

No data available.

**Other terrestrial non-mammals:**

No data available.

## **12.2. Persistence and degradability**

**Assessment biodegradation and elimination (H<sub>2</sub>O):**

Biodegradable. readily biodegradable, but failing 10d window

## Elimination information:

70 - 80 % CO<sub>2</sub> formation relative to the theoretical value (28 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) (aerobic, activated sludge, domestic, non-adapted) readily biodegradable, but failing 10d window

60 - 70 % BOD of the ThOD (28 d) (OECD Guideline 301 F) (aerobic, activated sludge, domestic)  
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

## Assessment of stability in water:

No data available.

Study scientifically not justified.

**12.3. Bioaccumulative potential**

## Assessment bioaccumulation potential:

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is possible.

**12.4. Mobility in soil**

## Assessment transport between environmental compartments:

Volatility: The substance will slowly evaporate into the atmosphere from the water surface.

Adsorption in soil: Adsorption to solid soil phase is not expected.

**12.5. Results of PBT and vPvB assessment**

According to Annex XIV of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria. Self classification

**12.6. Other adverse effects**

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

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**SECTION 13: Disposal Considerations****13.1. Waste treatment methods**

Observe national and local legal requirements.

## Contaminated packaging:

Packs that cannot be cleaned should be disposed of in the same manner as the contents.

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## SECTION 14: Transport Information

### Land transport

#### ADR

UN number: UN3082  
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TETRAHYDROGERANIOL)  
Transport hazard class(es): 9, EHSM  
Packing group: III  
Environmental hazards: yes  
Special precautions for user: Tunnel code: E

#### RID

UN number: UN3082  
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TETRAHYDROGERANIOL)  
Transport hazard class(es): 9, EHSM  
Packing group: III  
Environmental hazards: yes  
Special precautions for user: None known

### Inland waterway transport

#### ADN

UN number: UN3082  
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TETRAHYDROGERANIOL)  
Transport hazard class(es): 9, EHSM  
Packing group: III  
Environmental hazards: yes  
Special precautions for user: None known

#### Transport in inland waterway vessel

Not evaluated

### Sea transport

#### IMDG

UN number: UN 3082  
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TETRAHYDROGERANIOL)

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Transport hazard class(es):	9, EHS
Packing group:	III
Environmental hazards:	yes
	Marine pollutant: YES
Special precautions for user:	None known

**Air transport**

IATA/ICAO

UN number:	UN 3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TETRAHYDROGERANIOL)
Transport hazard class(es):	9, EHS
Packing group:	III
Environmental hazards:	yes
Special precautions for user:	None known

**14.1. UN number**

See corresponding entries for "UN number" for the respective regulations in the tables above.

**14.2. UN proper shipping name**

See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

**14.3. Transport hazard class(es)**

See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

**14.4. Packing group**

See corresponding entries for "Packing group" for the respective regulations in the tables above.

**14.5. Environmental hazards**

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

**14.6. Special precautions for user**

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated

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Ship Type:

Not evaluated

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## SECTION 15: Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

### 15.2. Chemical Safety Assessment

Chemical Safety Assessment performed

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## SECTION 16: Other Information

### Assessment of the hazard classes according to UN GHS criteria (most recent version)

Acute Tox. 5 (dermal)

Skin Corr./Irrit. 2

Aquatic Acute 2

Aquatic Chronic 2

Eye Dam./Irrit. 2A

Any other intended applications should be discussed with the manufacturer. Corresponding occupational protection measurements must be followed.

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

Skin Corr./Irrit.

Skin corrosion/irritation

Eye Dam./Irrit.

Serious eye damage/eye irritation

Aquatic Chronic

Hazardous to the aquatic environment - chronic

H319

Causes serious eye irritation.

H315

Causes skin irritation.

H411

Toxic to aquatic life with long lasting effects.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

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