We create chemistry

Safety data sheet

1. Identification

Product identifier

Citronellyl Acetate

Chemical name: Citronellyl acetate
CAS Number: 150-84-5

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

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

Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

2. Hazards Identification

Classification of the substance or mixture

According to UN GHS criteria

Skin Corr./Irrit. 2
Aquatic Acute 2
Aquatic Chronic 2

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

Label elements

Globally Harmonized System (GHS)

Pictogram:

Signal Word:
Warning

Hazard Statement:

H315	Causes skin irritation.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P280	Wear protective gloves.
P273	Avoid release to the environment.
P264	Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P332 + P313	If skin irritation occurs: Get medical attention.
P391	Collect spillage.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Precautionary Statements (Disposal):

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

Other hazards

According to UN GHS criteria

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.

3. Composition/Information on Ingredients

Substances

Chemical nature

Citronellyl acetate
CAS Number: 150-84-5
EC-Number: 205-775-0

Hazardous ingredients (GHS)
According to UN GHS criteria

Citronellyl acetate

Content (W/W): >= 75 % - <= 100 %	Skin Corr./Irrit. 2
CAS Number: 150-84-5	Aquatic Acute 2
EC-Number: 205-775-0	Aquatic Chronic 2
	H315, H401, H411

geranylacetate

Content (W/W): > 0 % - < 1 %	Skin Corr./Irrit. 2
CAS Number: 105-87-3	Skin Sens. 1
	Aquatic Acute 2
	Aquatic Chronic 3
	H315, H317, H412, H401

nerylacetate

Content (W/W): > 0 % - < 1 %	Skin Sens. 1B
CAS Number: 141-12-8	Aquatic Acute 2
EC-Number: 205-459-2	H317, H401

Citronellol

Content (W/W): > 0 % - < 0,1 %	Acute Tox. 5 (oral)
CAS Number: 106-22-9	Acute Tox. 5 (dermal)
EC-Number: 203-375-0	Skin Corr./Irrit. 2
	Eye Dam./Irrit. 2A
	Skin Sens. 1B
	Aquatic Acute 2
	H319, H315, H317, H303 + H313, H401

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

Mixtures

Not applicable

4. First-Aid Measures

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.

Most important symptoms and effects, both acute and delayed
Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far

Indication of any immediate medical attention and special treatment needed
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media
Suitable extinguishing media:
carbon dioxide, dry powder, foam

Unsuitable extinguishing media for safety reasons:
water jet

Special hazards arising from the substance or mixture
carbon oxides, harmful vapours
The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters
Special protective equipment:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations. Cool endangered containers with water-spray.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation. Avoid contact with the skin, eyes and clothing. Use personal protective clothing. Information regarding personal protective measures, see section 8. Do not breathe vapour/spray.

Environmental precautions
Do not discharge into drains/surface waters/groundwater. Inform authorities in the event of product spillage to water courses or sewage systems.

Methods and material for containment and cleaning up

For small amounts: Contain with absorbent material (e.g. sand, silica gel, acid binder, general purpose binder, sawdust).
For large amounts: Dike spillage. Pump off product.
Dispose of absorbed material in accordance with regulations.

7. Handling and Storage

Precautions for safe handling

Ensure thorough ventilation of stores and work areas. Wear suitable protective clothing and eye/face protection. Avoid contact with the skin, eyes and clothing. Keep container tightly sealed. This product may cause irritations; wash your hands after every contact.

Protection against fire and explosion:
Take precautionary measures against static discharges. Avoid all sources of ignition: heat, sparks, open flame.

Conditions for safe storage, including any incompatibilities

Odour-sensitive: Segregate from products releasing odours.
Further information on storage conditions: Keep container tightly closed and dry; store in a cool place. Protect contents from the effects of light.

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.

8. Exposure Controls/Personal Protection

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 >65 °C, e. g. EN 14387 Type A)

Hand protection:
Suitable chemical resistant safety gloves (EN ISO 374-1) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1): 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.
Manufacturer's directions for use should be observed because of great diversity of types.

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. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Avoid contact with the skin, eyes and clothing. No eating, drinking, smoking or tobacco use at the place of work. Hands and/or face should be washed before breaks and at the end of the shift. Store work clothing separately.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Form:	liquid	
Colour:	colourless, clear	
Odour:	flowery, fruity	
Odour threshold:	< 100 ppm	
pH value:	4,4 (0,0159 g/l, 20 °C)	(pH Meter)
Melting point:	< -100 °C	(OECD Guideline 102)
Boiling point:	239,8 °C (1.013 hPa)	(measured)
Flash point:	93,5 °C	(ASTM D93, closed cup)
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	
Flammability:	hardly combustible	(derived from flash point)
Lower explosion limit:	0,6 %(V) (90,7 °C)	(air)
Upper explosion limit:	For liquids not relevant for classification and labelling.	
Ignition temperature:	235 °C	(DIN 51794)
Vapour pressure:	0,0197 hPa (20 °C) Extrapolated value, dynamic	(measured)
Density:	0,888 g/cm3 (20 - 25 °C) Literature data. 0,862 g/cm3 (55 °C)	
Relative density:	0,888 (25 °C) Literature data.	
Relative vapour density (air):	6,83 (20 °C) Heavier than air.	(calculated)
Solubility in water:	15,9 mg/l (25 °C)	(Directive 92/69/EEC, A.6)

Solubility (qualitative) solvent(s):	organic solvents soluble	
Partitioning coefficient n-octanol/water (log Kow):	4,9 (25 °C)	(Directive 92/69/EEC, A.8)
Self ignition:	Based on its structural properties the product is not classified as self-igniting.	Test type: Spontaneous self-ignition at room-temperature.
Thermal decomposition:	>= 390 °C (DSC (DIN 51007)) No exothermic decomposition within the mentioned temperature range.	
Viscosity, dynamic:	2,37 mPa.s (20 °C) The value was determined by calculation from the detected kinematic viscosity.	(OECD 114)
	1,58 mPa.s (40 °C) The value was determined by calculation from the detected kinematic viscosity.	(OECD 114)
Viscosity, kinematic:	2,66 mm2/s (20 °C)	(OECD 114)
	1,81 mm2/s (40 °C)	(OECD 114)
Explosion hazard:	Based on the chemical structure there is no indication of explosive properties.	
Fire promoting properties:	Based on its structural properties the product is not classified as oxidizing.	

Other information

Self heating ability:	It is not a substance capable of spontaneous heating.	
SADT:	Study scientifically not justified.	
pKA:	Study scientifically not justified.	
Adsorption/water - soil:	KOC: 2409; log KOC: 3,382	(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.	
Molar mass:	198,31 g/mol	

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:	Corrosive effects to metal are not anticipated.	
Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.

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

Possibility of hazardous reactions
No hazardous reactions if stored and handled as prescribed/indicated.

Conditions to avoid
See SDS section 7 - Handling and storage.

Incompatible materials

Substances to avoid:
oxidizing agents

Hazardous decomposition products

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

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact.

Experimental/calculated data:
LD50 rat (oral): 6.800 mg/kg

LD50 rabbit (dermal): > 2.000 mg/kg

Irritation

Assessment of irritating effects:
Skin contact causes irritation. Not irritating to the eyes.

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

Serious eye damage/irritation rabbit: non-irritant (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:

Skin sensitizing effects were not observed in animal studies. A controlled medical study in humans did not reveal a skin sensitizing effect.

Experimental/calculated data:
Buehler test guinea pig: Non-sensitizing. (OECD Guideline 406)

Human Maximization Test human: Non-sensitizing.

Germ cell mutagenicity

Assessment of mutagenicity:
In the majority of tests performed (bacteria/microorganisms/cell cultures) a mutagenic effect was not found. A mutagenic effect was also not observed in in-vivo assays. 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:
In long-term studies in rats and mice in which the substance was given by gavage, a carcinogenic effect was not observed. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

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:
In animal studies the substance did not cause malformations. 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:
No substance-specific organtoxicity was observed after repeated administration to animals. 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.

12. Ecological Information

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) 6,1 mg/l, Brachydanio rerio (OECD Guideline 203, semistatic)
The statement of the toxic effect relates to the analytically determined concentration.

Aquatic invertebrates:
EC50 (48 h) 3,48 mg/l, Daphnia magna (OECD Guideline 202, part 1, semistatic)
The statement of the toxic effect relates to the analytically determined concentration. The product has low solubility in the test medium. A saturated solution has been tested.

Aquatic plants:
EC50 (72 h) > 7,2 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)
The statement of the toxic effect relates to the analytically determined concentration.

No observed effect concentration (72 h) 2,22 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)
The statement of the toxic effect relates to the analytically determined concentration.

Microorganisms/Effect on activated sludge:
EC20 (30 min) > 1.000 mg/l, activated sludge (OECD Guideline 209, aerobic)

Chronic toxicity to fish:
No data available regarding toxicity to fish.

Chronic toxicity to aquatic invertebrates:
No data available regarding toxicity to daphnids.

Assessment of terrestrial toxicity:
No data available concerning terrestrial toxicity.

Persistence and degradability

Assessment biodegradation and elimination (H2O):
Readily biodegradable (according to OECD criteria).

Elimination information:
93 % CO2 formation relative to the theoretical value (28 d) (OECD Guideline 310) (aerobic, activated sludge, domestic, adapted)

Assessment of stability in water:
In contact with water the substance will hydrolyse slowly.
Information on Stability in Water (Hydrolysis):
$t_{1/2}$ 4.101 h (20 °C, pH value 4), (OECD Guideline 111, pH 4)

$t_{1/2}$ 2.523 h (25 °C, pH value 4), (OECD Guideline 111, pH 4)

$t_{1/2}$ 8.191 h (20 °C, pH value 7), (OECD Guideline 111, pH 7)

$t_{1/2}$ 4.905 h (25 °C, pH value 7), (OECD Guideline 111, pH 7)

$t_{1/2}$ 337 h (20 °C, pH value 9), (OECD Guideline 111, pH 9)

$t_{1/2}$ 185 h (25 °C, pH value 9), (OECD Guideline 111, pH 9)

Bioaccumulative potential

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

Bioaccumulation potential:
No data available.

Mobility in soil

Assessment transport between environmental compartments:
Volatility: The substance will rapidly evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is expected.

Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

Other adverse effects

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

13. Disposal Considerations

Waste treatment methods

Observe national and local legal requirements.

14. Transport Information

Land transport

ADR

UN number or ID number:	UN3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CITRONELLYL ACETATE)
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes

Special precautions for user:	None known

RID

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

Inland waterway transport

ADN

UN number or ID number:	UN3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CITRONELLYL ACETATE)
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 or ID number:	UN 3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CITRONELLYL ACETATE)
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes Marine pollutant: YES
Special precautions for user:	EmS: F-A; S-F

Air transport

IATA/ICAO

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

Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

Further information
Product may be shipped as non-hazardous in suitable packages containing a net quantity of 5 L or less under the provisions of various regulatory agencies: ADR, RID, ADN: Special Provision 375; IMDG: 2.10.2.7; IATA: A197; TDG: Special Provision 99(2); 49CFR: §171.4 (c) (2) and also the Special Provision 375 in Appendix B which is regulated in China "Regulations Concerning Road Transportation of Dangerous Goods Part 3: Index of dangerous goods name and transportation requirements" (JT/T 617.3)

15. Regulatory Information

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.

16. Other Information

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

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

Skin Corr./Irrit.	Skin corrosion/irritation
Aquatic Acute	Hazardous to the aquatic environment - acute
Aquatic Chronic	Hazardous to the aquatic environment - chronic
Skin Sens.	Skin sensitization
Acute Tox.	Acute toxicity
Eye Dam./Irrit.	Serious eye damage/eye irritation
H315	Causes skin irritation.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.
H319	Causes serious eye irritation.
H303 + H313	May be harmful if swallowed or in contact with skin.

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. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.